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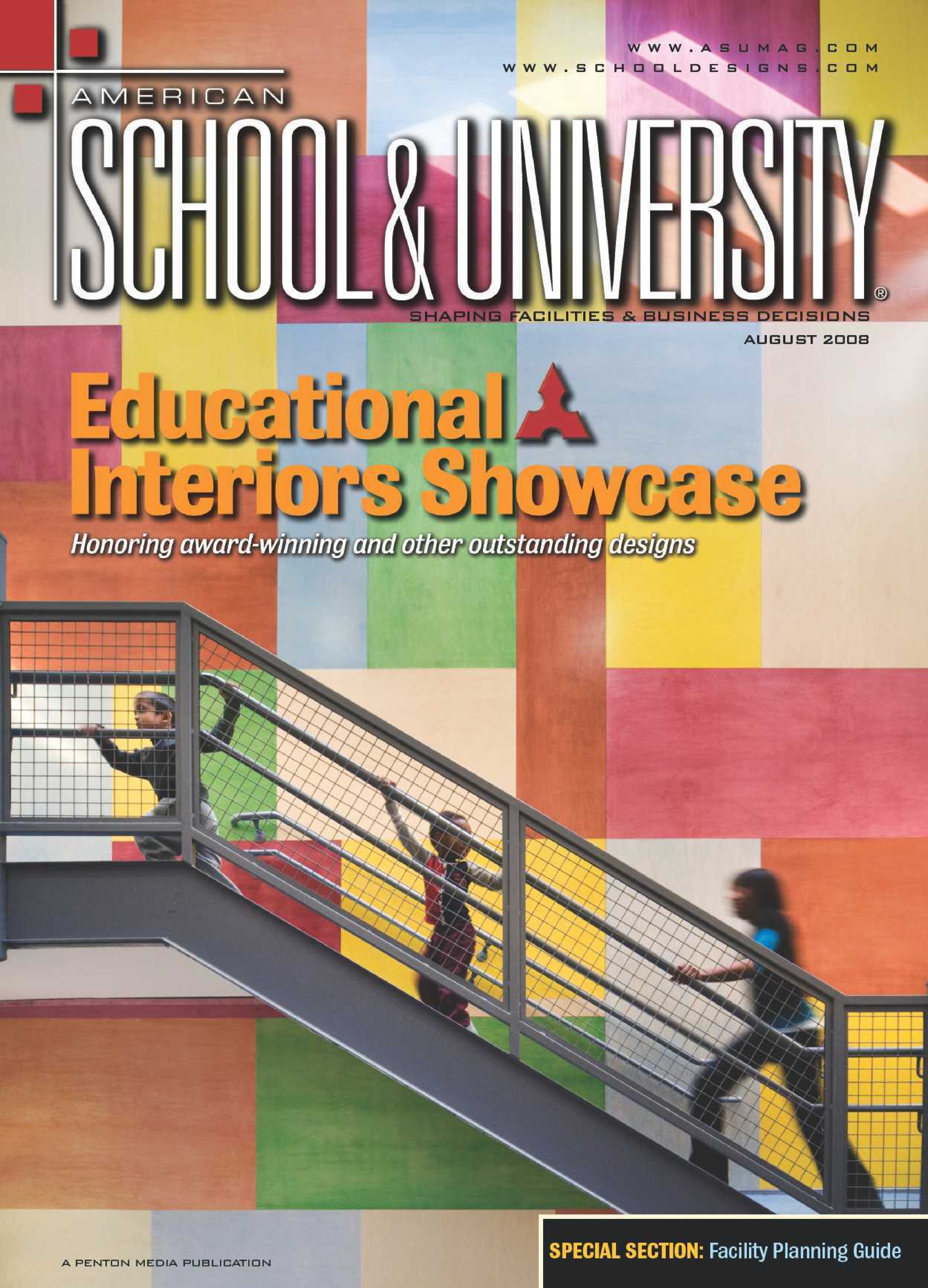

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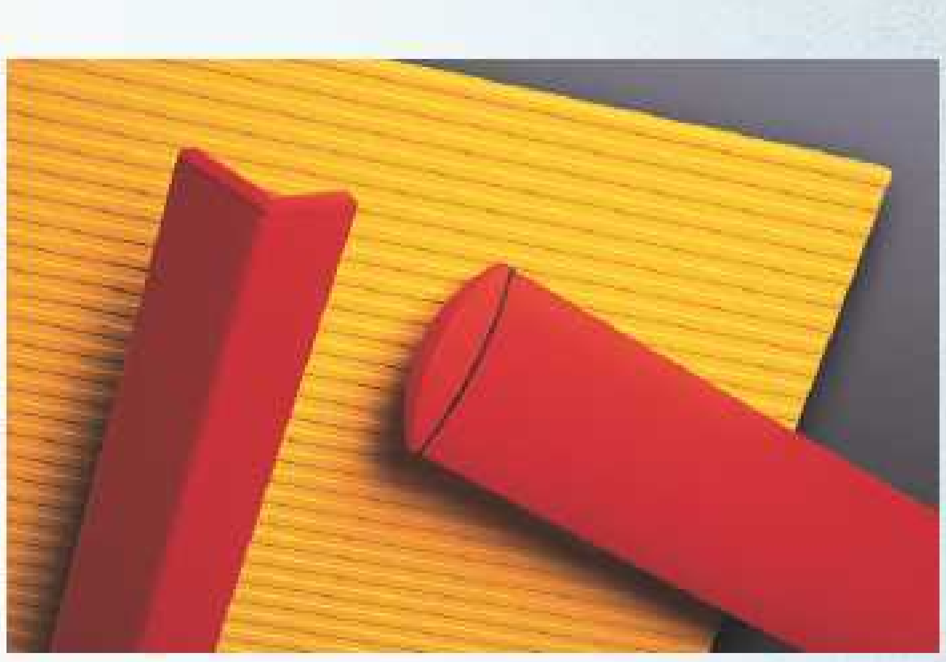

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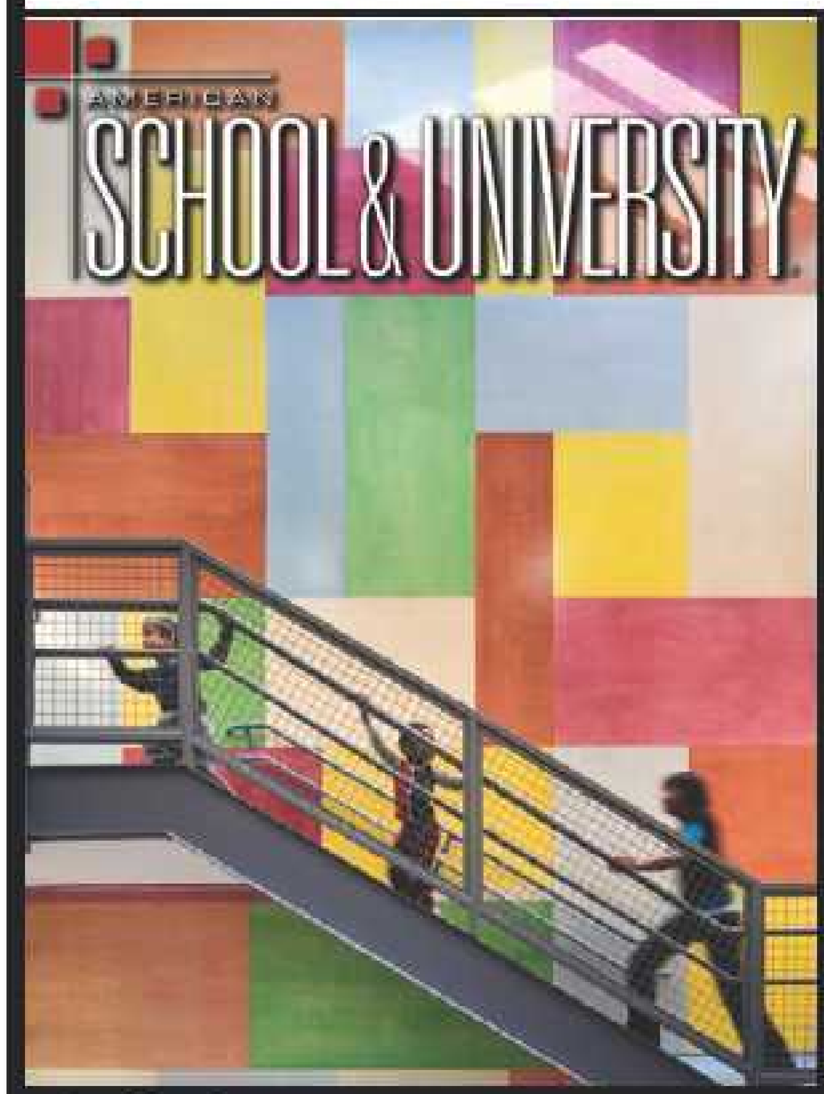

On the Cover:
Crow Island School Citation winner: The Bronx Early Learning Center, Bronx, N.Y.; **Architect:** Magnusson Architecture and Planning, PC; **Photographer:** Fred Charles Photography

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The Golden Rule

The 2008 Summer Olympic Games are underway in Beijing, China, and it's time to channel your inner athlete—or inner couch potato—whatever the case may be.

While watching the Olympics, you may notice that most results don't leave room for argument. It's easy to determine a winner when it's all about the time clock. Michael Phelps won his first gold medal in the men's 400-meter individual medley with a time of 4 minutes, 3.84 seconds.

Scoring other events, such as gymnastics, is subjective. So much so that in 2006, the "Code of Points" and the entire scoring system were overhauled. A judging controversy in the 2004 Olympic games brought the reliability and objectivity of the scoring system into question. Proponents of the new "Code of Points" say it is necessary to advance the sport, as it promotes difficult skills and more objective judging. Opponents say that without an emphasis on artistry, the sport's essence will change and that the new code abolishes the excitement of attaining a "perfect 10."

It's the same with school design. One person may appreciate a dramatic entrance; another would rather see something that blends into the background. One person may enjoy bright colors, another would prefer something more subdued.

You might be thinking it would be nice to have a "Code of Points," so that every education institution could follow the "rules" of school design. Realistically, though, the perfect school will never exist, because the factors that affect school design are endless: budgets, region, trends in technology, the list goes on.

When our jury was looking at projects this year for the Educational Interiors Showcase, it brought to the table different opinions about aesthetics. But in the end, the discussions were about some of the essential elements of education design—security, creating an environment for learning, a healthful environment—and how to package that into an award-winning facility.

Looking through this issue, we hope you will be inspired by some of these school designs. A special thanks to the jurors—David Magida, Frank Sever and Charlie Wilson—who created that "perfect" combination of the objective and subjective. ■

slustig@asumag.com

WEB 101

Get on the bus

Some of your comments about a question we asked recently at SchoolhouseBeat: The Blog regarding whether it's wise for school districts to be cutting student transportation:

•"I think by cutting busing, you are cutting a form of mass transit and simply shifting an even greater expense to the parents by putting more of them on the road having to bring their children to school."

•"The carbon footprint of having a few buses making their routes has to be much smaller than hundreds of cars operating to take kids to and from school. The safety factor, overall cost factor and the convenience for the parents has to be much more favorable as well."

•"Too often, buses run to schools way under capacity because parents are driving kids to school. This not only wastes their fuel but also increases air pollution around the schools."

For more comments (and possible solutions!), visit http://blog.asumag.com/schoolhouse_beat/2008/07/28/bus-rides.—*Susan Lustig*

Middletown Middle School, Middletown, PA *Architect*: Crabtree Rohrbaugh & Associates, Mechanicsburg, PA

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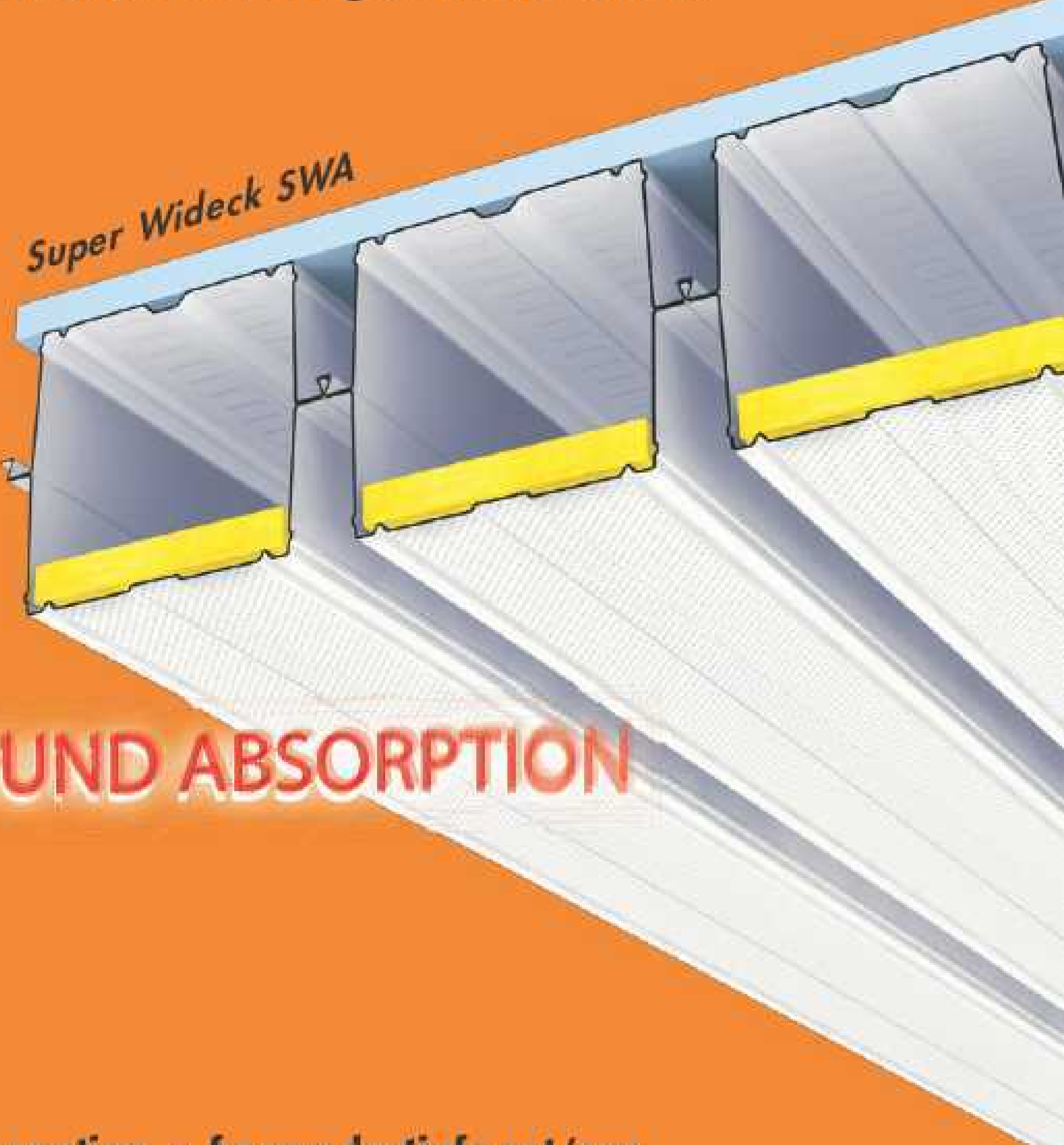

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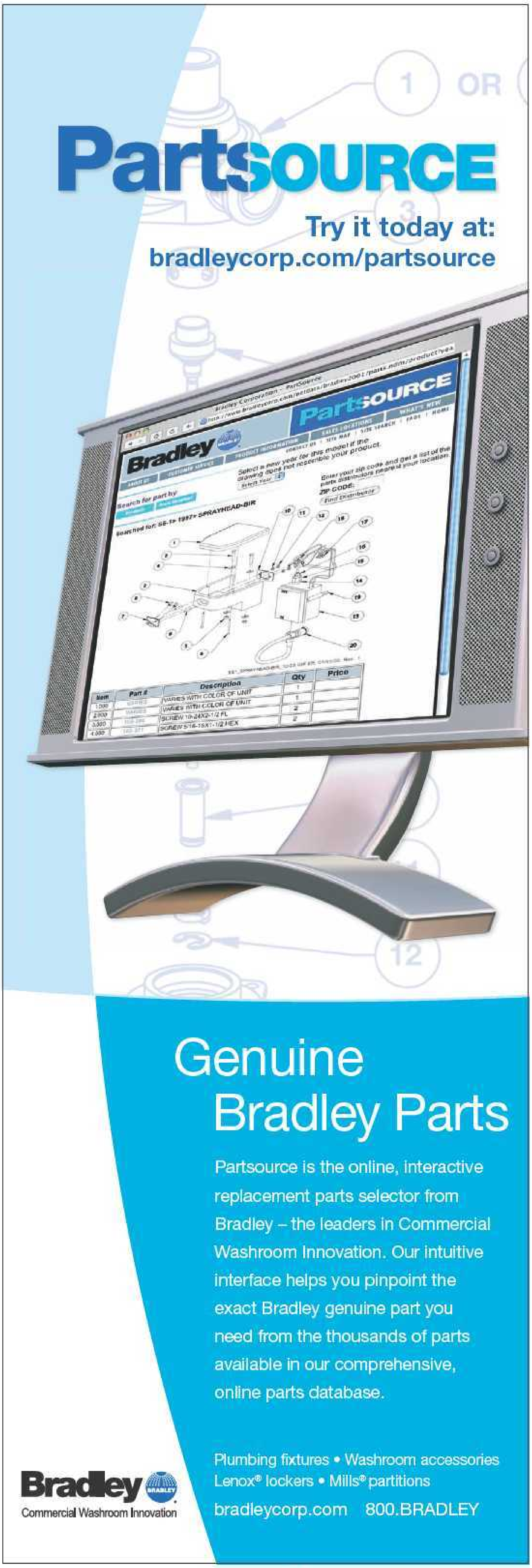

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The 2008 Educational Interiors Showcase jury: Sever, Magida and Wilson.

David Magida
Chief Administrative Officer
Norwich University, Northfield, Vt.

David has devoted his professional career to the management of higher-education facilities and grounds. Since 1979, he has assumed expanding levels of responsibility within higher education while retaining oversight of master planning, construction and renovation projects. David has served as chief administrative officer at Norwich University for 15 years. In this role, he oversees most university-wide administrative support services, in addition to his responsibility for facilities operations and construction.

Frank Sever
Supervisor of Buildings, Grounds & Equipment
Mayfield City School District, Mayfield Heights, Ohio

Frank has more than 25 years experience in facilities management. He has contributed to multiple construction and building-improvement projects, serving as both owner's representative and project manager. Frank currently is involved in an $11 million district renovation project for the Mayfield City School District. Last year, he helped the district earn the 2007 EPA Tools for Schools Excellence Award and an honorable mention in *American School & University*'s Green Cleaning Award for Schools and Universities. Frank continues to emphasize the importance of indoor air quality and its impact on the education process.

Charles A. Wilson III, RA
Senior Associate
Ayers/Saint/Gross Architects + Planners, Baltimore

Charlie has more than 30 years experience in the planning, design and construction of a variety of projects in both the public and private sectors. His previous leadership in the university architect's office at the University of Cincinnati helped transform a dense, urban campus into a place recognized by the Princeton University Press as one of the more important destinations for world-class architecture in the last 20 years. His current projects at Ayers/Saint/Gross include planning a billion-dollar healthcare expansion at Emory University, Atlanta; master plans for Lafayette College, Easton, Pa., and the University of Maryland, Baltimore; housing and parking studies for the University of Maryland, Baltimore County; and a building and land-use plan for the University of Scranton, Pa.

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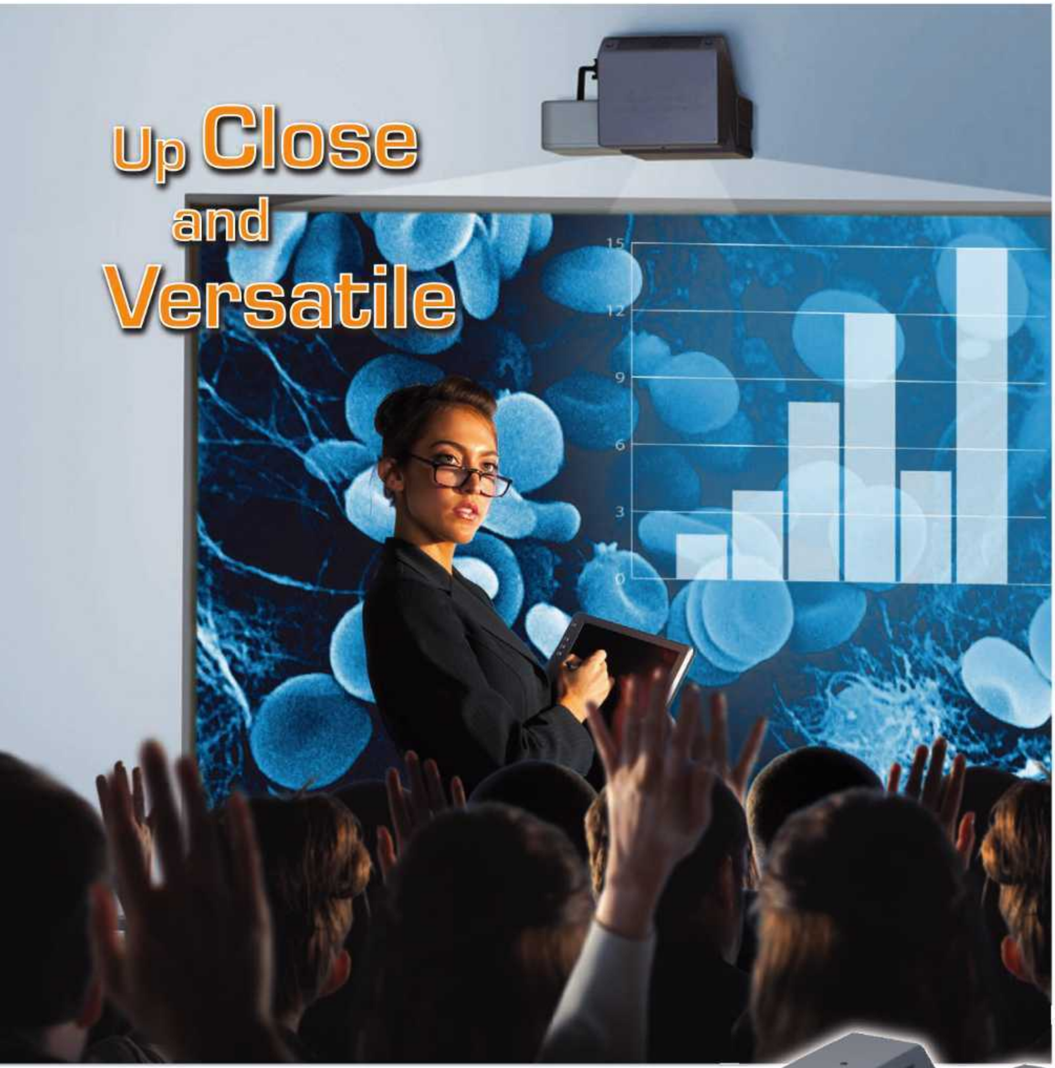

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Interiors That Stand Out

"It's what's on the inside that counts"—at least when it comes to *American School & University*'s annual Educational Interiors Showcase competition. Each May, *AS&U* assembles at its Overland Park, Kan., headquarters a jury made up of education and architectural professionals from across the country to pore over an array of exceptional school and university interiors, and select the best of the best. Of this year's 109 entries, the jury chose 19 projects to receive citations. The following criteria were used in making its selections:

- **Sustainability.**
  - •Is the design a good steward of the environment?
  - •Are daylighting techniques used effectively?
- **Character.**
  - •Does the space represent its identity?
- **Long-term appropriateness of materials and colors.**
  - •Does the design merge timelessness with quality?
  - •Is the interior design more than a passing fad?
- **Innovation.**
  - •Is the space fresh, yet flexible and functional?
- **Adaptable to current and future technology.**
  - •Will the space endure evolving technology needs?
- **Balancing collaborative spaces.**
  - •Is there a variety of interactive spaces for collaboration, along with focused areas for private study?
- **Safety.**
  - •Does the design create a space that is safe for students and the environment?

David Magida

Frank Sever

Charles A. Wilson III

"A place to dream a little—this space connects with children. Exceptional color tones."

p. 29

"The colors are bold and unique. The details in the design are apparent. A very happy, warm and friendly space."

p. 34

"This renovation tells the story of the college. A unique building that identifies the end user. A mission-driven solution."

p. 38

"Thoughtful and impressive renovation. Nice introduction of daylighting, giving the area identity."

p. 42

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MAIN WINNERS

CROW ISLAND SCHOOL CITATION

Magnusson Architecture and Planning, PC
The Bronx Early Learning Center
Bronx, New York..p. 16-17

"Clean, sharp and full of playfulness. An urban oasis!"
—2008 Jury

COLLEGIATE CITATION

Earl Swensson Associates, Inc.
Belmont University, Bill and Carole Troutt Theater
Nashville, Tennessee ....p. 18-19

"Forty years from now, people will still walk in the building and say 'Wow!'"
—2008 Jury

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The Bronx Early Learning Center
Bronx, New York

Firm: Magnusson Architecture and Planning, PC

Client:
The Volunteers of America of Greater New York;
Joseph Auld, Director of Capital Projects;
Richard Motta, President and CEO, Volunteers of America

Area of project entry category:
35,000 sq. ft.

Cost of project entry category:
$10 million

Cost/square foot of project entry category:
$295

Completion:
September 2007

Photographer:
Fred Charles Photography

The Bronx Early Learning Center is a new 35,000-square-foot facility serving 250 special-needs children through a universal pre-K and early-intervention program. By renovating a turn-of-the-century stable, the preschool has brought new life to the street, while serving the needs of an underserved community.

The goal was to design a vibrant preschool to stimulate student growth and development in a nurturing environment. Public spaces use a color-coding system to denote their function; the repetition of simple shapes and forms reinforces this logic for students. Design elements include classroom entrances that mimic welcoming front doors and an open stair with a striking back wall of colored wood panels extending from the ground floor to a skylighted roof.

To meet the school's programmatic needs, a partial third floor was created over the existing double-height second floor. Program elements include 22 classrooms; occupational-, physical- and speech-therapy rooms; a roof playground; and a double-height, 1,700-square-foot multipurpose room, serving as the gym and auditorium. There are also administrative offices, a lounge and conference rooms.

"Outstanding example of an adaptive reuse. Clean, sharp and full of playfulness. An urban oasis!" —2008 Jury

Belmont University, Bill and Carole Troutt Theater
Nashville, Tennessee

Firm: Earl Swensson Associates, Inc.

Client:
Belmont University; Robert Fisher, President

Total area:
37,110 sq. ft. (total):
5,495 sq. ft. (new construction-theater);
24,159 sq. ft. (renovated area-theater);
7,456 sq. ft. (new construction-black box)

Total cost:
$9,881,243 (total):
$6,782,329 (theater); $3,098,914 (black box)

Total cost/square foot:
$266.26 (total):
$228.72 (theater); $415.63 (black box)

Completion:
August 2007

Photographer:
Vince Wallace/Silver Hill Images

A university-owned, historic church building, previously used as a nursing school, gained new life through conversion into Belmont University's 357-seat drama theater. Connected by a scene shop, the second theater in the complex is a new black-box addition, which doubles as an experimental theater for small productions and as a classroom.

The two-story sanctuary space had been framed over, and the spectacular beauty of the barrel-vault ceiling had been hidden with laid-in acoustical tiles. For the conversion, the building's auditorium was stripped to uncover features of the original sanctuary and balcony. Working from the original documents, the design team was able to duplicate the building's styles of moldings, doors and window casings.

Major modifications were made to the audience chamber seating configurations to improve sightlines. This included removing the floor to install slope-rack seating. The sanctuary's original chandelier was found and rehabilitated to its former grandness. For the stage, the proscenium arch and fly tower were created with the removal of the back wall.

The building now glows with new purpose.

"The attention to history and detail is very nicely done. Forty years from now, people will still walk in the building and say 'Wow!'"

—2008 Jury

CITATIONS

GOLD

BBS Architects & Engineer, PC
Cherry Lane Elementary School
Carle Place, New York .... p. 29

"A place to dream a little—this space connects with children."
—2008 Jury

LaBella Associates, PC
Gates Chili High School, Science Corridor
Rochester, New York .... p. 30

"A lot of learning potential exists here. Well-done!"
—2008 Jury

RTKL Associates Inc.
University of Kansas School of Medicine, The University of Kansas Hospital, Cancer Center and Medical Pavilion
Westwood, Kansas .... p. 31

"The design creates a dignified, tasteful, comforting, timeless environment for those dealing with the most serious of situations. Excellent!"
—2008 Jury

Scott Simons Architects
Tilton School, Academic Building
Tilton, New Hampshire ....p. 32-33

"Elegant use of durable materials with regional representation. Nice transition from the old to the new building."
—2008 Jury

The Stacy Group
Collinsville Early Childhood Center
Collinsville, Oklahoma .... p. 34

"The colors are bold and unique. The details in the design are apparent. A very happy, warm and friendly space."
—2008 Jury

SILVER

Annette Miller Architects, Inc.
Wright State University, Raj Soin College of Business, Rike Hall Renovation
Dayton, Ohio .... p. 35

"Very cost-effective while being innovative. Nice ceilings and indirect lighting."
—2008 Jury

BCDM, Inc.
General Omar Bradley Elementary School, Thomas J. Devlin Educational Theater and Music/Science Addition
Fort Leavenworth, Kansas .... p. 36

"This building appeals to the senses and curiosity of children. Once inside, how could you not want to learn?"
—2008 Jury

Hastings & Chivetta Architects, Inc.
University of Tulsa, Collins Hall Welcome Center
Tulsa, Oklahoma .... p. 37

"Elegant. A beautiful, timeless design that signifies a strong institution with a deep history."
—2008 Jury

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SILVER

Partners in Design Architects
Gateway Technical College, Horizon Center for Transportation Technology
Kenosha, Wisconsin .... p. 38

"This renovation tells the story of the college. A mission-driven solution."
—2008 Jury

Perry Dean Rogers | Partners Architects
Norwich University, Wise Campus Center
Northfield, Vermont .... p. 40-41

"Clever utilization of space. There is a quiet elegance to the project."
—2008 Jury

Rutledge Interiors
Motlow State Community College, Clayton Glass Library
Tullahoma, Tennessee .... p. 39

"Very well-detailed with expressive materials. It represents the rural area beautifully."
—2008 Jury

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BRONZE

Macrae-Gibson Architects
PS 70 X Pool
Bronx, New York.. p. 42

"Thoughtful and impressive renovation. Nice introduction of daylighting, giving the area identity."
—2008 Jury

Plunkett Raysich Architects, LLP
University of Wisconsin—Madison, Microbial Sciences Building
Madison, Wisconsin .... p. 43

"Modern building with a lot of openness. You can 'feel' the learning."
—2008 Jury

RTKL Associates Inc.
University of Kansas School of Medicine, The University of Kansas Hospital, Center for Advanced Heart Care
Kansas City, Kansas .... p. 44

"Functional layout. The family areas were given some semblance of privacy. Nicely done."
—2008 Jury

Image courtesy of NTD Architecture

Imagine a day when a healthy, green school is just called a school.

Image courtesy of Lionakis

Image courtesy of Gelfand Partners Architects

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SEPTEMBER 11/12, 2008
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BRONZE

SHW Group LLP
Andy Dekaney High School
Houston, Texas .... p. 45

"Intriguing blend of local materials. Good balance of space, volume and natural light."
—2008 Jury

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Chesterfield, Missouri .... p. 46

"Meticulous attention to detail. Very creative and flexible."
—2008 Jury

VCBO Architecture
University of Utah, Spencer F. and Cleone P. Eccles Health Sciences Education Building
Salt Lake City, Utah .... p. 47

"Very functional floor treatments. The flexibility of the spaces rings throughout."
—2008 Jury

GOLD CITATION

Cherry Lane Elementary School
Carle Place, New York

Firm: BBS Architects & Engineer, PC

Client:
Carle Place Union Free School District; W. Michael Mahoney, Superintendent

Area of project entry category:
6,240 sq. ft.

Cost of project entry category:
$2,150,000

Cost/square foot of project entry category:
$344

Completion:
August 2006

Photographer:
Amiaga Photographers

Over the years, classrooms at Cherry Lane Elementary School had been converted for library use. The time had come for these spaces to revert to classrooms.

The school added a new library to the building. The program included book stacks, spaces for small-group instruction and group reading/performance, and a "tract" center for multimedia materials.

The base construction for the addition is steel frame with masonry wall infill. Exterior materials were selected to give the addition a vocabulary of its own without divorcing it from the parent structure. Multiple sound, video projection and computer systems were required for incorporating technology into the library curriculum.

Color and geometric shapes abound throughout the design to appeal to children. On the interior, the carousel theme dictates the organization of spaces and establishes the curved exterior wall. Artist Scott Gustafson donated use of his images from the book *Classic Fairy Tales* for use in the library, tying together the joint themes of the carousel and childrens' literature.

"A place to dream a little—this space connects with children. Exceptional color tones." —2008 Jury

GOLD CITATION

Gates Chili High School, Science Corridor
Rochester, New York

Firm: LaBella Associates, PC

Client:
Gates Chili Central School District; John Brondon, Assistant Superintendent of District Operations

Area of project entry category:
14,757 sq. ft.

Cost of project entry category:
$4,058,175

Cost/square foot of project entry category:
$275

Total area:
155,365 sq. ft.

Total cost:
$37 million

Total cost/square foot:
$238.14

Completion:
January 2008

Photographer:
Gene Avalone

"Attractive, yet easily maintained finishes. A lot of learning potential exists here. Well-done!"

—2008 Jury

This project transformed a former courtyard into a state-of-the-art science wing for Earth science, biology and chemistry classes. The main corridor contains an aquatics lab and botanical planters that are used during labs. A skylight spans the corridor, giving the area a greenhouse quality.

The aquatic lab's six tanks house a variety of fresh and saltwater marine life, such as tropical fish, local Great Lakes fish and amphibians. Sensors in the tanks and water-filtration systems enable students and teachers to monitor water quality and environmental data from within classrooms.

Planters in the center of the corridor and along the sides are used in botanical experiments and lessons. An assortment of tropical and desert plants aids in lessons on germination, soil testing and climate.

Each science classroom has windows that enable a view of the corridor. These windows also allow natural light into each classroom.

By taking advantage of the science corridor's new features, the school district has been able to expand the science curriculum and learning opportunities.

University of Kansas School of Medicine, The University of Kansas Hospital, Cancer Center and Medical Pavilion

Westwood, Kansas

Firm: RTKL Associates Inc.

Client:
The University of Kansas Hospital; Jeff Wright, Executive Director, Cancer Services

Total area:
185,000 sq. ft.

Total cost:
$25 million

Total cost/square foot:
$135

Completion:
July 2007

Photographers:
Jeffrey Totaro/Esto; Dimitre Photography; J.J. Lee/RTKL

The Cancer Center at The University of Kansas Hospital's Westwood campus provides cancer patients a single location for all cancer-treatment services—from early detection through breast cancer survivorship—all within a comfortable, healing environment.

The design converted a 1950s-era office building with a distinguished history (the headquarters and birthplace of Sprint) into a new, state-of-the-art cancer center. Circulation and easy wayfinding have been integrated into every aspect of the design. The level of detail and finish addresses the quiet dignity and purposefulness of each element within the total composition. The facility resembles a boutique hotel rather than a medical center. The treatment areas, situated on the third "tree top" level, have translucent dividers that allow natural light to enter the space while maintaining patient privacy. Patients can control their environments, including adjusting speakers and lighting from their recliners.

Each of these elements contributes to patient comfort and transforms patient care into a holistic healing experience with an emphasis on the well-being of the patient, as well as families and loved ones.

"The design creates a dignified, tasteful, comforting, timeless environment for those dealing with the most serious of situations. Excellent!"

—2008 Jury

GOLD CITATION

Tilton School, Academic Building
Tilton, New Hampshire

Firm: Scott Simons Architects

Client:
Tilton School; James Clements, Head of School

Total area:
38,000 sq. ft.

Total cost:
$8.8 million

Total cost per square foot:
$231

Completion:
August 2007

Photographer:
Justin Van Soest

The Tilton School's goal was to create an academic building that would transform the way the school thought about itself. Having spent seven years strengthening its curriculum, faculty and board of trustees, the school was eager to construct a building that represented in physical form the many positive changes that had occurred internally. To respond to this challenge, the architect designed a multipurpose academic building that organized the school's program requirements to closely align with the academic mission.

The program included three new science laboratories and prep rooms, a 114-seat seminar room, the Center for Learning resource room, a language laboratory, eight new classrooms, faculty offices and administrative offices. To reflect the school's new academic model of horizontal integration, departmental classrooms and programs were situated near their companion classrooms and programs. Faculty offices and meeting rooms were merged to encourage closer collaboration and cross-disciplinary teaching. Departments that work closely together, such as math and science, were situated next to one another, sharing classrooms, work spaces, faculty offices and conference areas. To reflect the school's commitment to the academic model of vertical integration, a dramatic, central atrium space, Tower Hall, was designed in the center of the combined academic building complex. This space visually and physically connects all academic and administrative spaces, and provides stunning views of the campus and academic quadrangle for everyone passing through the building.

The exterior was designed with strong references to the iconic academic and mill buildings of northern New England. So that it will stand as an inspiration for generations of Tilton students to come, it is built of rugged, ageless materials: brick, granite, white oak and glass. The new building is connected to the existing administrative and academic building, Plimpton Hall, at the northeast corner. The two buildings create a unified academic/administrative complex and a clear boundary for the new academic quadrangle.

"Elegant use of durable materials with regional representation. Nice transition from the old to the new building."

—2008 Jury

"The new academic building at Tilton School was made possible because of the partnership among the architect, the builder and the school. Not only has the school ended up with a beautiful building, but also the entire facility incorporates the school's educational philosophy in a powerful way."

—Jim Clements, Head of School

Collinsville Early Childhood Center

Collinsville, Oklahoma

Firm: The Stacy Group

Client:
Collinsville Public Schools; Pat Herald, Superintendent

Area of project entry category:
28,400 sq. ft.

Cost of project entry category:
$3,592,006

Cost/square foot of project entry category:
$126.48

Completion:
August 2007

Photographer:
Imageworks Studio

Collinsville Early Childhood Center's program was developed through a collaborative process including administrators, teachers, the community, architects and interior designers. The program called for a 450-student facility that would maintain a sense of community and scale. The design develops the idea of a school-within-a-school. The scale of the spaces becomes more intimate as students enter each pod and ultimately their individual classrooms.

The design includes a secure vestibule that allows for controlled access into the building. All of the exterior entrances can be seen from three camera locations. Each pod can be locked from the interior and eliminate access from the main corridors. This allows for egress through the pod and away from intruders.

Energy efficiency and operating costs also were identified as a high priority. The design allows for daylighting in each area. The building also uses ground-source heat pumps along with an energy-management control system. For additional energy savings, motion sensors control lighting in common spaces throughout the building; sinks and toilets use infrared controls.

Each pod has an outdoor classroom that allows for teaching "outside of the box." Administrators wanted to develop an area where students could be more hands-on and interact with nature.

The design of the interior spaces incorporates colors, shapes and textures to help students and visitors navigate the building more easily. Because each pod has its own entrance and identity, students develop a sense of community and ownership that teachers can use in the curriculum.

"The colors are bold and unique. The details in the design are apparent. A very happy, warm and friendly space."

—2008 Jury

Wright State University, Raj Soin College of Business, Rike Hall Renovation · *Dayton, Ohio*

Before

"Very cost-effective while being innovative. Nice ceilings and indirect lighting."

—2008 Jury

Firm: Annette Miller Architects, Inc.

Client:
Wright State University; Vicky Davidson, Associate Vice President

Area of project entry category:
40,000 sq. ft.

Cost of project entry category:
$3.2 million

Cost/square foot of project entry category:
$80

Completion:
August 2007

Photographer:
Ken Schory

The renovation of Rike Hall provided the opportunity to create modern, flexible classrooms; vibrant student spaces; and a new image for the Wright State University Raj Soin College of Business.

The architect worked with the university to develop prototypical teaching spaces that will serve as model "classrooms of the future." Flexibility was a key requirement and was addressed through the lighting and furnishings concepts. High-quality indirect lighting was used for general illumination, and multi-level switching and task lighting at the teaching walls create flexibility for varied teaching methods. Movable furnishings in the smaller classrooms allow for simple reconfiguration, and support a range of teaching styles and organizations.

Creative design of public areas and classrooms alike was critical to the project's success. Corridors, student spaces and offices were provided with a consistent level of refinement, resulting in a cohesive solution. Functional amenities, such as seating, display space and technology connections, were provided throughout, allowing learning to spill out of the classrooms and into adjacent public areas.

General Omar Bradley Elementary School, Thomas J. Devlin Educational Theater and Music/Science Addition

Fort Leavenworth, Kansas

Firm: BCDM

Client:
Fort Leavenworth USD No. 207; William Heinen, CFO

Area of project entry category:
16,157 sq. ft.

Cost of project entry category:
$4,462,278

Cost/square foot of project entry category:
$276

Completion:
July 2007

Photographer:
Kessler Photography

Classroom spaces shouldn't limit curious minds. When well-designed, they do more than simply house the learning process—they enable it.

Students of General Omar Bradley Elementary School are experiencing this firsthand with their new science, art and music wing, which features a 60-seat digital-projection planetarium. This military campus has an exceptionally high student turnover rate of 60 percent each year, so the school strives to make each student's experience a rich encounter.

The result is a unique, energetic space that serves as a creative catalyst for students and teachers. It is an interactive environment designed to evolve along with the educational curriculum and students' imaginations.

Challenges of this project included incorporating unique technology additions, along with interior remodels throughout the school year, with minimal impact on school operations. Special designs and systems required additional attention to tolerance and phasing, especially regarding the planetarium.

The planetarium itself is a round structure, adorned with cast stone and natural limestone cardinal compass points—symbolically emphasizing the role of education in finding one's sense of direction.

"This building appeals to the senses and curiosity of children. Once inside, how could you not want to learn?"

—2008 Jury

University of Tulsa, Collins Hall Welcome Center
Tulsa, Oklahoma

Firm: Hastings & Chivetta Architects, Inc.

Client:
University of Tulsa; Robert Shipley, Associate Vice President for Operations and Physical Plant

Area of project entry category:
39,103 sq. ft.

Cost of project entry category:
$7,610,997

Cost/square foot of project entry category:
$194.63

Completion:
July 2007

Photographer:
Sam Fentress/Fentress Photography

The two-story Collins Hall Welcome Center is situated at the end of a new three-block-long campus green that runs perpendicular to a major thoroughfare at the edge of the University of Tulsa (TU).

The 39,103-square-foot building signals arrival at the TU campus with a three-story stone and glass entry tower. The exterior reinforces the Collegiate Gothic building style found on campus by using a rich ashlar stone mixed with stone trim and slate tile roofs.

Collins Hall features a 2,000-square-foot "living room" that serves as the lobby. It is designed for comfort, yet is flexible enough for special events, along with adjacent patios that overlook the campus. The high windows, as well as various lighting elements, allow it to be used for either day or evening gatherings.

Collins Hall houses the TU president's administrative suite, alumni offices, development offices and the Heritage Room, which displays TU's storied history and accomplishments. It gathers many student-focused functions, including financial aid and admissions, in one location to better serve student needs.

"Elegant. A beautiful, timeless design that signifies a strong institution with a deep history."
—2008 Jury

Gateway Technical College, Horizon Center for Transportation Technology · *Kenosha, Wisconsin*

Firm: Partners in Design Architects

Client:
Gateway Technical College; Bryan Albrecht, President

Area of project entry category:
25,955 sq. ft.

Cost of project entry category:
$1.2 million

Cost/square foot of project entry category:
$46

Completion:
August 2007

This state-of-the-art transportation technology center was established to train and deliver highly proficient and much-needed automotive technicians and aeronautics pilots to local and national employers. The educational requirements included a student lounge, showroom, training/conference area, computer lab, technology lab, mechanic labs and a service bay to accommodate 10 lifts, alignment bays, dynometer bay, two tire-balancing/changing machines and brake lathes.

Transforming a metal-skinned airplane hangar into a transportation technology center was a monumental task. Also, it was necessary to recognize the public/private partnership between Gateway Technical College and Snap-on Incorporated, and achieve significant energy credits through the "Focus on Energy" program.

The challenge was met with a showroom/lounge addition to the building that created a street presence and formal entry. The interior renovation met the program requirements while highlighting the technology involved in the field of "new age" transportation.

Before

"This renovation tells the story of the college. A unique building that identifies the end user. A mission-driven solution."

—2008 Jury

Motlow State Community College, Clayton Glass Library
Tullahoma, Tennessee

Firm: Rutledge Interiors
Associated firm: Kline Swinney Associates

Client:
Tennessee Board of Regents;
Mary Lou Apple, President

Area of project entry category:
31,193 sq. ft.

Cost of project entry category:
$5,267,136

Cost/square foot of project entry category:
$168.85

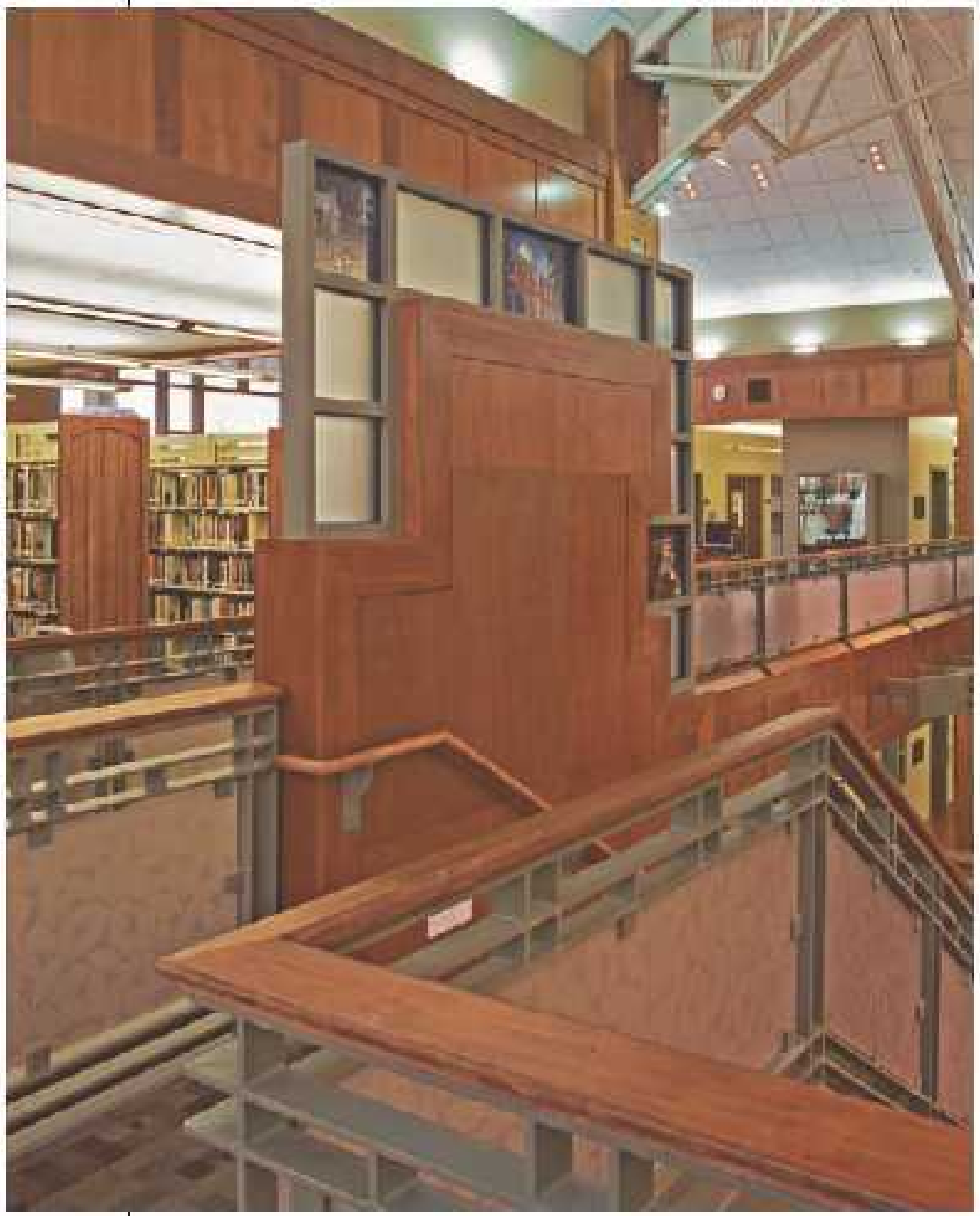
Completion:
January 2008

This library serves 12 rural counties near the Jack Daniels Distillery. The Craftsman style was selected to harmonize with the rural setting. The color scheme was chosen to coincide with the concept of bringing the outside in. Accents of wood and ceramics were added to contrast with the exposed structure and stimulate its warmth and texture.

The library's gable roof distinguishes the building from the rest of the school. The second-story entry rotunda is surrounded by second-floor library rooms, allowing students to experience the library spaces without entering it. The entry's floating wood ceiling allows sunlight from the clerestory above to filter through like trees filter light to the forest floor. Tumbled, earth-toned stone tile was used in the entry floor and accents like stones in a creek.

The massive stair supports are broken up with laminated photos of well-known scenes and landmarks from surrounding communities. The cantilevered stairs are like tree branches.

The building's exterior blends with the '60s campus architecture of rectangular brick buildings with horizontal limestone bands and vertical floor-to-ceiling slit windows.



"Very well-detailed with expressive materials. It represents the rural area beautifully."
—2008 Jury

SILVER CITATION

Norwich University, Wise Campus Center
Northfield, Vermont

Firm: Perry Dean Rogers | Partners Architects

Client:
Norwich University; Dave Magida, Chief Administrative Officer

Area of project entry category:
70,000 sq. ft. (renovation/addition)

Cost of project entry category:
$21 million

Cost/square foot of project entry category:
$292

Completion:
August 2007

Photographer:
Richard Mandelkorn Photography

The Wise Campus Center at Norwich University is an addition to the original Harmon Hall Student Union built in 1958. The project encompassed a complete renovation of the original 45,000-square-foot building and a new addition of 25,000 square feet. The university is known for its history as the oldest private military school in the country. Its civilian student population is expanding, and the Wise Campus Center is envisioned as the "campus living room" shared by these two groups. The building is intended to be the shared social space for civilian students, cadets and "Rooks," who are freshman cadets.

The program includes a winter garden; the main dining room with fireplace lounge; "Rook" dining room with fireplace lounge; faculty and staff dining room and terrace; outdoor dining; kitchens and servery; student organization offices; meeting rooms; "Rook" lounge; student lounge and function spaces; The Partridge Pub; grab-and-go dining; campus bookstore; post office; and convenience store.

The Wise Campus Center is nestled against the existing Harmon Hall building, separated by an interior light well that provides natural light in the heart of the space. The main dining room is defined by a winter garden along the west face, overlooking a new quad space developed as part of this project. The dining room and winter garden space are used not only for their primary functions, but also as a space for students to hang out, study, socialize and spend the cold winter days of Northfield, Vt. The pub and grab-and-go dining room spill out onto the quad, where wintertime activities, such as ice skating, take place. This relationship is reinforced by interior and exterior fireplaces.

The materials are taken from the campus and regional palette: brick, slate sculpings, wood panel, porcelain tile and naturally weathered copper.

"Clever utilization of space. There is a quiet elegance to the project."

—2008 Jury

PS 70 X Pool

Bronx, New York

Firm: Macrae-Gibson Architects

Client:
New York City School Construction Authority; Kerry Castellano, Principal

Total area:
5,000 sq. ft.

Total cost:
$5 million

Total cost/square foot:
$909

Completion:
December 2007

Photographer:
Lydia Gould-Bessler

In the United States, 25 percent of children under 18 are overweight or obese, putting them at elevated risk for Type II diabetes, high blood pressure and other related health risks. The crisis is worse in disadvantaged areas such as the South Bronx, where this project is situated. The overall intent of the project is to address this problem.

The design aims to create a unique place of physical learning and self-awareness within the school where the body can be allowed a respite from the deprivations and misunderstood indulgences of underprivileged urban childhood. The aim is to create a facility that encourages and supports physical education and health consciousness through teaching. It also encourages the possibility of reflection: on the continuity of life, on the nature of water and light, on the physical body, and on the nature of mobility and change.

"Thoughtful and impressive renovation. Nice introduction of daylighting, giving the area identity."

—2008 Jury

University of Wisconsin—Madison, Microbial Sciences Building

Madison, Wisconsin

Firm: Plunkett Raysich Architects, LLP

Associated firm: CO Architects

Client:
State of Wisconsin; John Rakocy, Project Manager, State of Wisconsin

Area of project entry category:
330,000 sq. ft. (total);
132,000 sq. ft. (asf)/228,000 sq. ft. (gsf)

Cost of project entry category:
$39,890,000 (asf); $68,918,000 (gsf)

Cost/square foot of project entry category:
$302.19 (asf); $302.27 (gsf)

Completion:
October 2007

Photographers:
Canfield Photography; CO Architects

"Modern building with a lot of openness. Maximized views with large windows. You can 'feel' the learning."

—2008 Jury

The Microbial Sciences Building is designed to provide an inviting, stimulating work environment with world-class research and instructional facilities. The 330,000-square-foot facility houses the research, teaching and outreach activities of three science departments. It features a 450-seat symposium center, a discovery center, highly sophisticated classrooms, modern instructional laboratories, and neighborhoods of physically secure research laboratories, support space, and investigator offices to encourage interaction and connectivity among users.

Sustainable standards incorporated into the project include daylighting, roof gardens, recycled-content materials, building-system commissioning, construction waste management, certified woods, zoned HVAC control systems, sun shading and fixture sensors. Each laboratory neighborhood is physically secure and consists of an instrument corridor with lab support space opening into laboratory space.

The overwhelming desire to foster researcher interaction and create a collegiate connection within the different programs, combined with long winter months, gave rise to the building's concept and form. The design segregates teaching and public facilities to the lower two floors, while maintaining a secure perimeter for the more sensitive research spaces housed on the upper four floors.

University of Kansas School of Medicine, The University of Kansas Hospital, Center for Advanced Heart Care · *Kansas City, Kansas*

"Functional layout. The family areas were given some semblance of privacy. Nicely done."

—2008 Jury

Firm: RTKL Associates Inc.

Client:
The University of Kansas Hospital; John Florio, Executive Director of Cardiovascular Services

Total area:
245,000 sq. ft.

Total cost:
$53 million

Total cost/square foot:
$216

Completion:
October 2006

Photographer:
Jeffrey Totaro/Esto

The Center for Advanced Heart Care at The University of Kansas Hospital is devoted to diagnosing and treating heart disease with advanced clinical protocols and cutting-edge technology. The new five-story facility integrates both visually and physically with the existing hospital, as well as the surrounding urban fabric.

The existing Bell Hospital and the new Heart Care Center are integrated on the ground level via the new emergency department and a public promenade. Height variations and architectural elements, however, differentiate the new building and provide wayfinding cues to visitors. Natural light, expansive views, artwork and a soothing color palette enhance the healing environment.

Careful planning with clinicians and staff resulted in a floor plan that reinforces the patient and staff experience and carefully separates the differing service lines. As one moves from the promenade to the procedure areas, spaces become more private. On the patient floors, decentralized nursing keeps caregivers near patients. The patient-centered design includes designated patient cardio tracks, family alcoves with overnight accommodations in patient rooms, and VIP suites with separate guest rooms.

Andy Dekaney High School
Houston, Texas

Firm: SHW Group LLP

Client:
Spring Independent School District;
Ralph H. Draper, Superintendent

Area of project entry category:
32,213 sq. ft.

Cost of project entry category:
$3,698,374.53

Cost/square foot of project entry category:
$114.81

Total area:
486,000 sq. ft.

Total cost:
$55.8 million

Total cost/square foot:
$114.81

Completion:
May 2007

Photographer:
Richard Payne

"Intriguing blend of local materials. Good balance of space, volume and natural light."

—2008 Jury

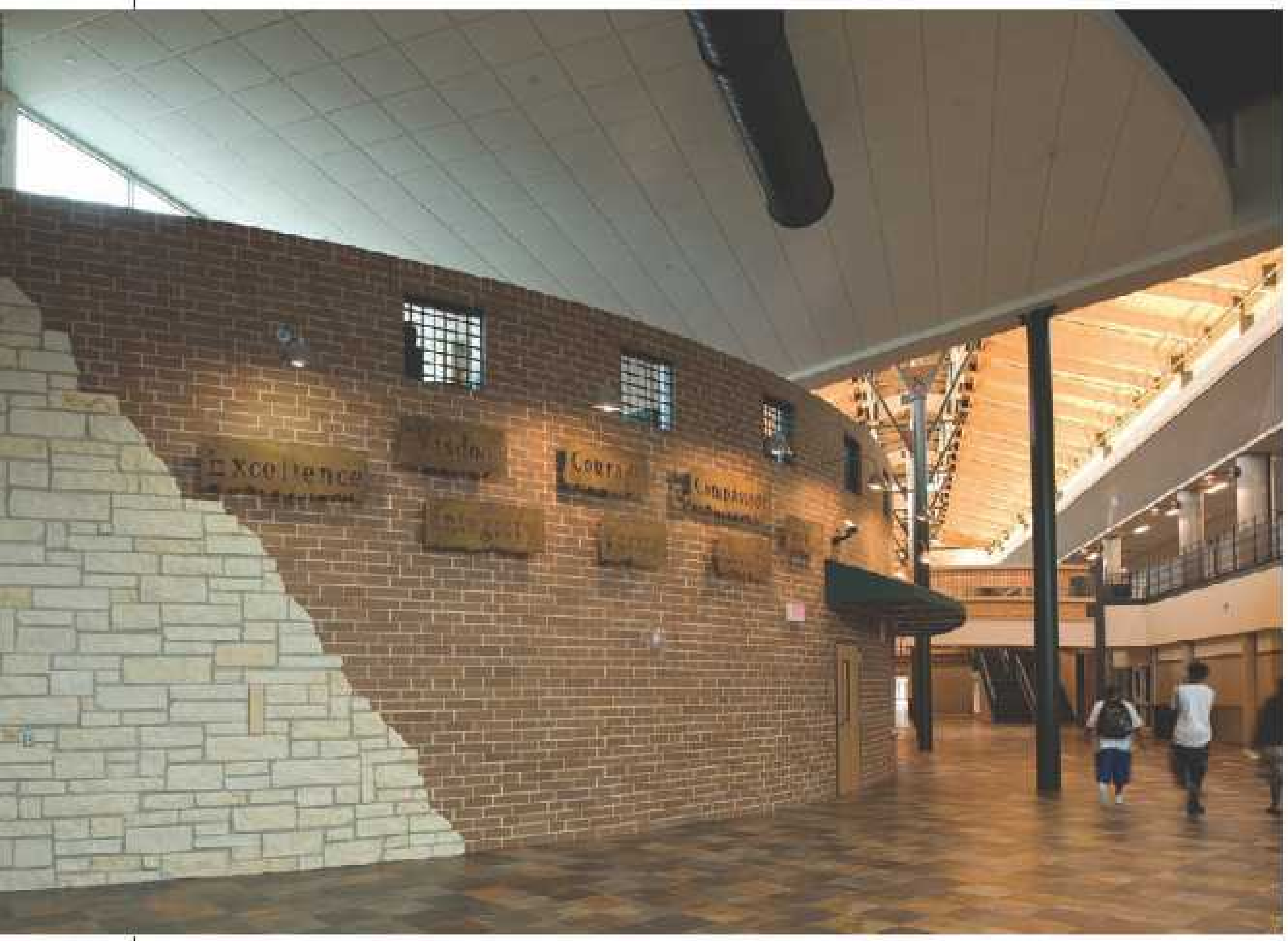
The 2,500-student Andy Dekaney High School is the result of a four-month "visioning process" and facility program brainstorming session conducted by Spring ISD and the architect. The program recognized educational intent, flexibility, safety/security and a comfortable aesthetic as overarching themes. Additionally, the program called for the school to be organized in small learning communities, each serving grades 9 to 12.

The 486,000-square-foot building is situated on an 80.7-acre site with natural materials that not only create a comfortable aesthetic, but also are inherently low-maintenance, durable finishes. Natural light is provided by large exterior windows and clerestory lighting.

The small learning community concept was used to break down the scale of the school. Each house is aligned vertically with students in grades 9 to 12. These alignments allow consistency of peers, teachers and dedicated administrators. Thus, if a student begins in one house, he or she will graduate from that same house and be taught by the same staff. Each house has its own flex space that can be used as a student lounge or small-group teaching space. The area can be supervised passively from the administrative complex in each community. These areas, as well as the rest of the building, offer both hard-wired and wireless computer access.

Additional flexibility is featured in the central 900-seat auditorium, which can be subdivided into two 150-seat teaching theaters with one 600-seat auditorium; a large-group instruction space with operable walls that serves as a multipurpose space; and a media center with four conference rooms.

The facility is a functional, positive learning environment wherein the teachers, staff, students and community develop a pride of place and a sense of belonging.



Logan University & College of Chiropractic, William D. Purser, DC Center · *Chesterfield, Missouri*

Firm: TR,i Architects

Associated firm: S.M. Wilson, Construction Manager

Client:
Logan College of Chiropractic; George Goodman, President

Area of project entry category:
48,305 sq. ft.

Cost of project entry category:
$16,250,305

Cost/square foot of project entry category:
$336.41

Completion:
May 2007

Photographer:
Sam Fentress

"Meticulous attention to detail. Very creative and flexible."

—2008 Jury

Imagine a building so flexible inside, it spills outside. Indoor or outdoor concerts, daytime long-distance learning, nighttime performing-arts events, weekday lectures, conventions on weekends—the William D. Purser, DC Center does it all.

Designed not just as a gorgeous auditorium with more than 1,500 seats, it also is set creatively for conversion to a full range of venues and functions. Walls can move, motorized seats disappear. In just moments, the auditorium becomes a 900-seat theater and two 150-seat lecture halls. Retract the seats again and a function space for exhibit booths, exercise class or a beautiful reception hall is created.

The 9,800-square-foot lobby is flexible, yet intimate for banquets, cocktail parties or lectures. With gleaming terrazzo floors, elegant custom chandeliers, soaring 40-foot ceilings, groups can have a full exterior campus view or be enclosed by motorized shades.

All venues can occur indoors or out. The stage's "hangar" doors allow performances to occur in the outdoor amphitheater. The same event can be enjoyed indoors by rotating the scenes.

University of Utah, Spencer F. and Cleone P. Eccles Health Sciences Education Building · *Salt Lake City, Utah*

Firm: VCBO Architecture

Associated firm: Ellenzweig Associates

Client:
University of Utah/State of Utah; Lorris Betz, MD, Senior Vice President for Health Sciences

Area of project entry category:
28,000 sq. ft.

Cost of project entry category:
$4.2 million

Cost/square foot of project entry category:
$150

Total area:
156,000 sq. ft.

Total cost:
$31 million

Total cost/square foot:
$199

Completion:
May 2005

Photographer:
Paul Richer/Richer Images

The University of Utah Spencer F. and Cleone P. Eccles Health Sciences Education Building is a center for interdisciplinary collaboration on the University of Utah Health Sciences Campus. A key programmatic element of this building is learning space, programmed to include 43 flexible classrooms ranging from 15-person seminar rooms to 150-person lecture halls, and clinical skills and teaching lab suites. To foster collaboration among the multiple health-science disciplines that use the building, student common spaces are designated as a second key programmatic element.

The solution to these program requirements was to provide both traditional and nontraditional common and collaboration spaces throughout the building. Learning occurs both in the classroom and in the spaces between, so the hallways and lounge spaces are designed with as much detail as the dedicated learning spaces. The common spaces are designed for both planned meetings and for chance encounters, to accommodate ad hoc learning opportunities, and to provide an atmosphere for each student's learning style.

The Eccles Health Sciences Education Building is the first university and state of Utah building project to receive LEED certification.

"Very functional floor treatments. The flexibility of the spaces rings throughout."

—2008 Jury

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Comal Independent School District, Administration and Support Services Building · *New Braunfels, Texas*

Firm: SHW Group LLP

Client:
Comal ISD; Marc Walker, Superintendent

Area of project entry category:
115,000 sq. ft.

Cost of project entry category:
$6.9 million

Cost/square foot of project entry category:
$60

Completion:
December 2006

Photographer:
Mark Trew

This facility consolidated 27 separate buildings into one central administrative and support-services building housing eight departments. Because they are in one central location, employees are able to work more efficiently, which is more valuable to the students they serve.

There was much discussion among the departments to design a facility that catered to the needs of the district. One important need was a boardroom. Previously, board meetings were held at different campuses throughout the district, which caused confusion among parents and employees.

Each department had a different vision of what it wanted in the building, but after multiple meetings, a design was finalized that included input from each employee.

The entire existing facility consisted of three single-story industrial warehouse buildings, two of which were metal buildings. The third building's exterior walls were constructed using cold-formed metal framing and EIFS with a built-up roof system. Then, new interior partitions walls were constructed of light-gauge steel studs and drywall. Load-bearing steel studs also were used to support office, storage and mechanical mezzanines. Rooftop units on the roof and on interior mezzanines service the buildings.

Texas Tech University, National Ranching Heritage Center
Lubbock, Texas

Firm: Texas Tech University System Facilities Planning and Construction
Associated firm: Adling Associates Architects

Client:
Texas Tech University; Mike Ellicott, Vice Chancellor

Area of project entry category:
15,960 sq. ft.

Cost of project entry category:
$3.7 million

Cost/square foot of project entry category:
$232

Completion:
August 2007

Photographer:
TTUS Photographic Services

This project is a combined effort of the National Ranching Heritage Association and Texas Tech University.

The association, having outgrown its facilities, needed a children's classroom, boardroom, additional exhibit space, collections work/storage areas and outdoor meeting space.

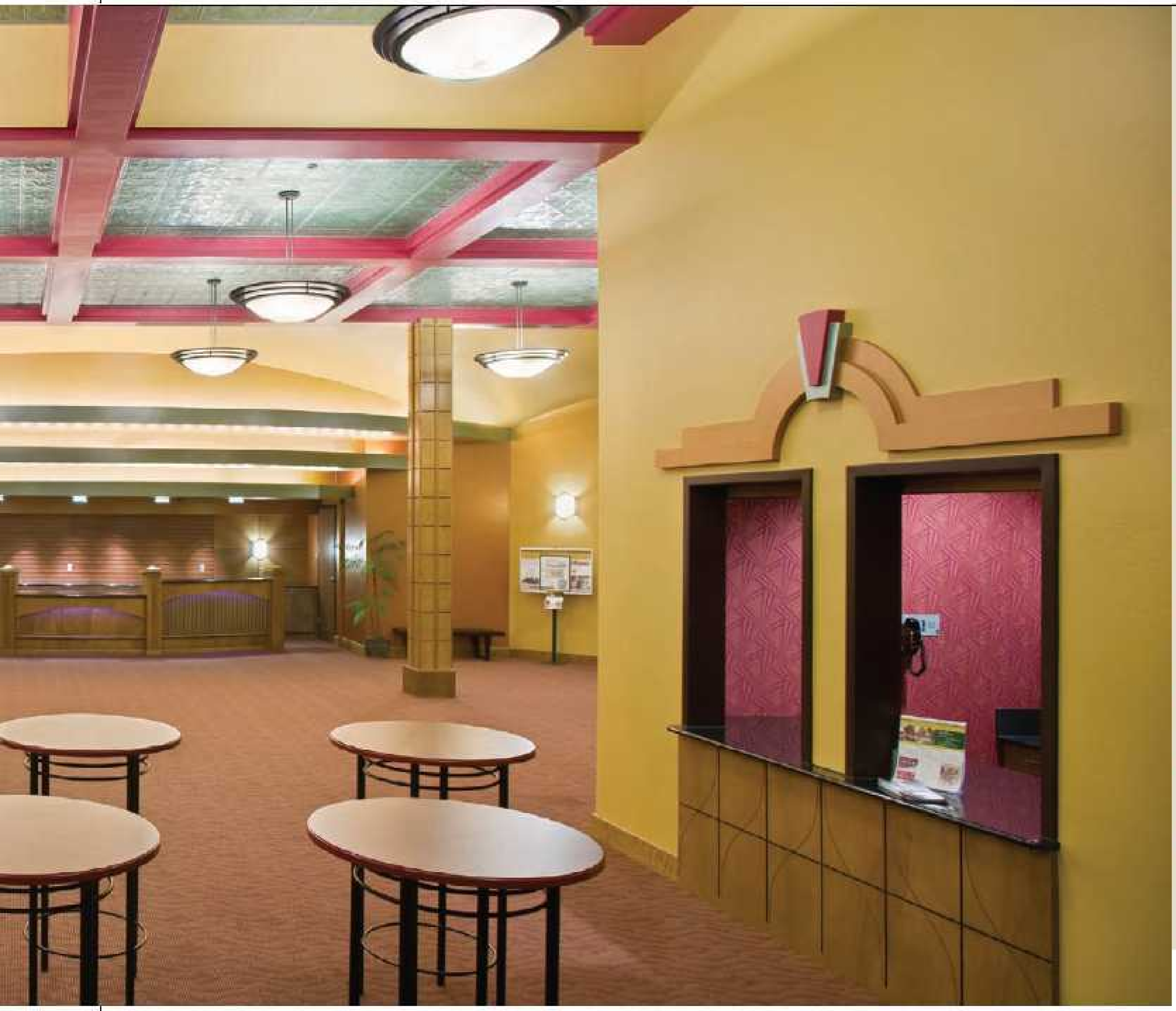
The designer was asked to incorporate natural colors, warm woods and Mission furnishings. With limited Mission-style case goods available, the designer chose more functional desks accented with Mission seating in haired cowhide, leather and warm fabrics.

A boardroom with a coffered ceiling, stone wall, leather chairs and a 26-foot table is situated off a wide corridor with well-lighted niches housing artifacts. Existing offices were renovated to provide the classroom and new exhibit space.

Collection storage and an exhibit work room for research were situated in the basement with movable shelving for maximum use of space.

Stone walls surround the large terraced patio for outdoor functions, which ties the buildings together with the Pitchfork Ranch Pavilion. The exterior blends the facilities through the use of rough-sawn siding, natural stone and a red metal roof.

Whitefish Middle School
Whitefish, Montana



Firm: Architects West, Inc.

Associated firm: J. Constenius Architects

Client:
Whitefish School District; Jerry House, Superintendent

Area of project entry category:
12,764 sq. ft.

Cost of project entry category:
$4,585,000

Cost/square foot of project entry category:
$359.21

Total area:
113,126 sq. ft.

Total cost:
$14,197,000

Total cost/square foot:
$125.50

Completion:
September 2007

Photographers:
Living Images Photography, LLC; John Evans/Architects West

Whitefish Middle School is a historic building in the heart of downtown Whitefish, Mont. In spring 2003, voters passed a bond to provide a combination of renovations and new additions to the existing school. The design emphasis was to maintain the historic features and facade of the existing two-story facility. The work consisted of 81,127 square feet of new construction and 19,235 square feet of modernization.

The auditorium portion of the facility is used by the community for events, as well as by the school, and received the full support of the community, gaining additional public funding. The result was an elegant 12,764-square-foot auditorium with full stage lighting, rigging, a sound system and curtains. It seats 470 comfortably.

The main facility was completed in December 2006 at a final construction cost of $9,612,000; the auditorium portion was completed in September 2007 for $4,585,000. This project was completed using the general contractor/construction manager method.

Westhampton Beach High School, Performing Arts Center

Westhampton Beach, New York

Firm: BBS Architects & Engineer, PC

Client:
Westhampton Beach Union Free School District; Lynn Schwartz, Superintendent

Area of project entry category:
27,925 sq. ft.

Cost of project entry category:
$9.6 million

Cost/square foot of project entry category:
$343

Total area:
65,400 sq. ft.

Total cost:
$21.8 million

Total cost/square foot:
$325

Completion:
March 2007

Photographer:
Bernstein Associates Photographers

The Westhampton Beach community has been exceptionally supportive of the school district and of the arts, and participates actively in school district functions. The new performing-arts addition supports the theatrical production needs of the adjacent Westhampton Beach Middle School, as well as the high school.

Westhampton Beach High School was built with a distinctively functional style and approach typical of the 1960s. Embellishments took place through the use of interior and exterior mosaic tile. This material has been used in the new addition as a reference and continuation of approach. The new lobby has a full view of the original middle school building, highlighting its more traditional style of architecture and local iconography. Additional design motifs include the five-bar music staff and circular shapes that represent abstract musical notes and the gathering of people.

The structural system of the new additions is steel frame with masonry infill. The 800-seat auditorium has its own adjustable house lighting, heating, cooling, ventilation and sound systems to support musical and theatrical productions.

Greater Amsterdam School District, Bert DeRose Theater
Amsterdam, New York

Firm: Dodge Chamberlin Luzine Weber Associates Architects

Client:
Greater Amsterdam School District; Ronald Limoncelli, Superintendent

Area of project entry category:
13,959 sq. ft.

Cost of project entry category:
$3,497,387

Cost/square foot of project entry category:
$250

Completion:
May 2007

Photographer:
Randall Perry Photography

To provide a contemporary and functional theater space for students and the community, Bert DeRose Theater underwent a complex renovation and was rededicated to honor the district's adored teacher and drama adviser, and celebrate a new vivacity for all future performances.

Poor acoustics, inadequate lighting and sound systems, dilapidated seating, and insufficient ventilation systems marred many of the district's earlier performances. Existing sound and lighting-control systems were situated awkwardly adjacent to the proscenium.

To provide a modern lighting design, the architect designed a state-of-the-art control booth at the back of the house. Two lighting systems were installed: an induction lighting system used for general-purpose lighting and an incandescent lighting system used for all productions and special theater functions.

Comfortable, durable seating replaced the outdated and damaged seating. Four ADA-designated seating areas at the front and back of the house, and an accessible ramp improved accessibility.

The existing plaster ceiling was removed, which increased the volume of the space to incorporate three sets of distinct acoustical panels. Reflector panels were suspended from the ceiling, sound-absorption panels were installed at the back of the house, and sound-diffusing panels were installed at the audience level—all working together to promote an optimal audio experience.

Johnson & Wales University, Xavier Auditorium
Providence, Rhode Island

Firm: Lerner | Ladds + Bartels, Inc.

Client:
Johnson & Wales University;
Marco Maio, Project Manager

Area of project entry category:
9,325 sq. ft.

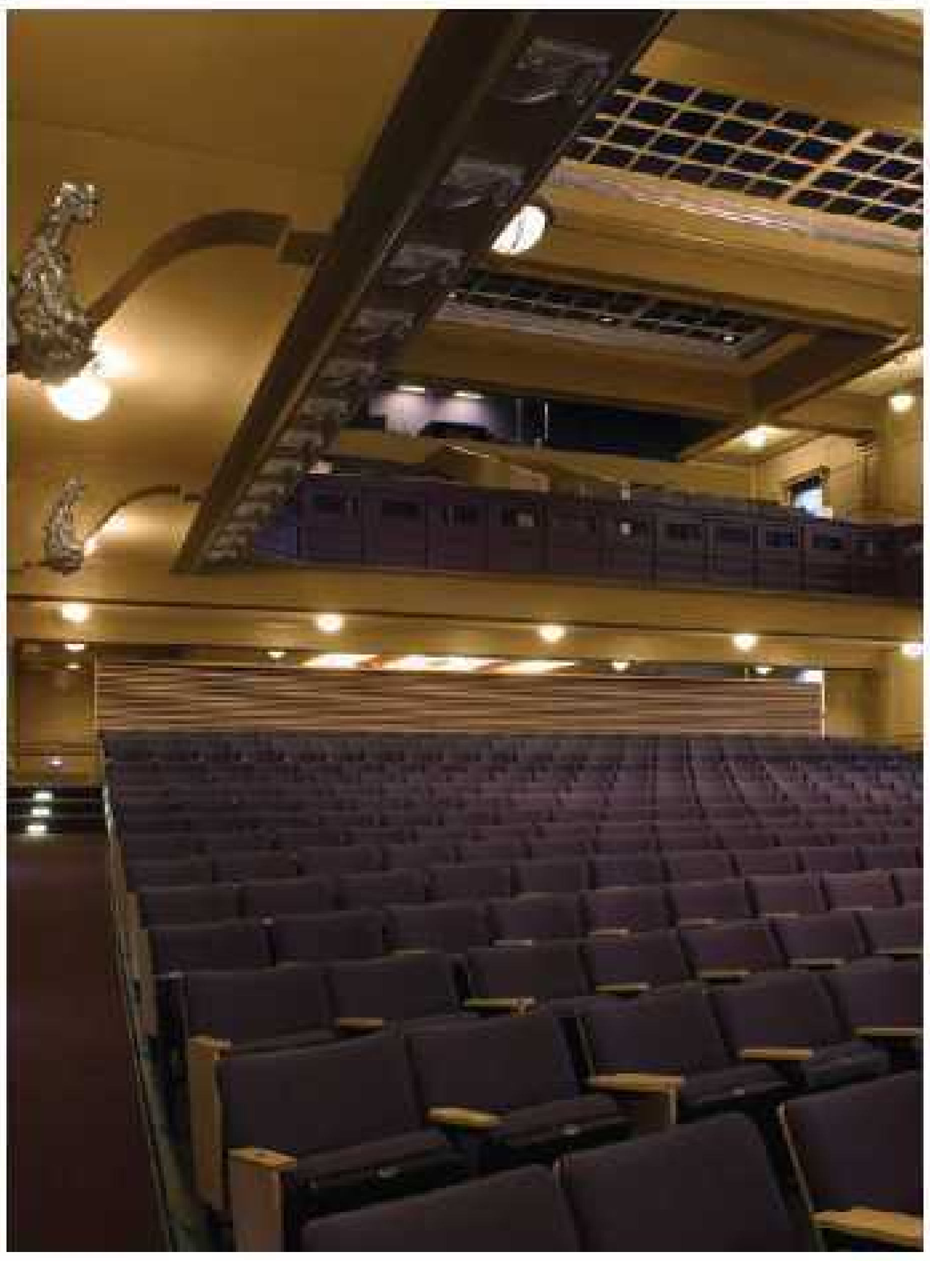
Cost of project entry category:
$2.9 million

Cost/square foot of project entry category:
$311

Total area:
13,500 sq. ft.

Completion:
September 2007

Photographer:
Warren Jagger Photography



Xavier Academy Hall was built decades ago as a Catholic school on a site bordering both an industrial district and a university campus; over time it had fallen into some disrepair. Johnson & Wales University, the current owner, asked the architect to renovate the auditorium space in order to create a 500+ seating venue for university functions and gatherings, as well as a legitimate theater for student use.

The theater space received a full renovation; the rake of the auditorium and balcony was adjusted and seating layout reconfigured to ensure that each seat has a good view of the stage. Paying close attention to acoustics, the architect designed a series of panels and screens to flank the stage, reflecting sound into the audience while concealing speakers and lighting, and effectively expanding the proscenium enclosure to embrace the extended stage. Other features include a new audiovisual system with distance-learning capabilities, a new HVAC system, increased ADA accessibility and new lavatories. The theater has become a self-sufficient entity.

Mount St. Mary's University, Knott Auditorium Renovation
Emittsburg, Maryland

Firm: Noelker and Hull Associates, Inc.

Client:
Mount St. Mary's University; Thomas H. Powell, President

Area of project entry category:
6,035 sq. ft.

Cost of project entry category:
$50,000

Cost/square foot of project entry category:
$8.77

Completion:
October 2007

Photographer:
Champion Brothers Photography

The Knott Auditorium, situated on the campus of Mount St. Mary's University, is one of the first impressions prospective students have of this private institution.

The architect was retained to develop an updated interior design with an inviting non-institutional look, as well as establish campus standards for furnishings. In a collaborative process with university administration, the interior designer created a design scheme using beautiful mural-size photographs of the campus printed on stretched fabric acoustical panels. In this spirit of collaboration, one of the selected mural photographs was taken by the university president's wife, Irene Powell. Warm wall and railing paint colors were recommended to complement the new photo mural panels, in addition to new carpeting and fiber-optic backlit glass signage featuring the university's logo. Photographer William Champion fabricated and installed the completed panels and glass signage.

The Knott Auditorium renovation succeeds as an impressive assembly space that has been transformed on a remarkably conservative budget.

Shepard High School, Cafeteria Expansion
Palos Heights, Illinois

Firm: DLA Architects, Ltd.

Client:
Community High School District 218;
John Byrne, Superintendent

Area of project entry category:
14,500 sq. ft.

Cost of project entry category:
$2.8 million

Cost/square foot of project entry category:
$193

Completion:
March 2007

In a nod to the school's astronaut namesake, a "space odyssey" motif greets 800 students every lunch period. Suspended clouds of ceiling tile and an aluminum grid morph into varying shapes beneath a black exposed-roof structure.

A two-story glass curtainwall, penetrated by a masonry colonnade mimicking the architecture of the existing building, brings in daylight. Adding to the energy efficiency are programmable fluorescent lights, switched for multiple levels of illumination and controlled by motion sensors. The mechanical system features a Web-based direct digital control (DDC) system consisting of a high-speed, peer-to-peer network of DDC controllers.

The cafeteria features flatscreen monitors at the serving lines and the snack bar that display messages or announcements transmitted via the district's Intranet. These monitors and a video projector are tied into the school's cable service, allowing the broadcast of important current events and headline news to a large group.

The addition boasts a snack bar and is a restricted entry for the adjacent gym. The cafeteria serves as a concession/reception area during athletic events and after-school activities.

Purdue University, Windsor Dining Court
West Lafayette, Indiana

Firm: Scholer Corporation

Associated firm: Ricca Newmark Design

Client:
Purdue University; Sarah Johnson, Director of Dining Services

Area of project entry category:
38,000 sq. ft.

Cost of project entry category:
$10 million

Cost/square foot of project entry category:
$263.15

Completion:
August 2005

Photographer:
Jon Denker/CAPS

Windsor Hall, the oldest women's residence on campus, comprises five buildings constructed over 20 years beginning in 1934. Amelia Earhart, Lillian Gilbreth and astronaut Janice Voss Ford are a few of the famous women who called Windsor home while studying at Purdue.

Windsor Dining Court, which provides meal service for all five buildings, serves more than 700 young women every day. In order to maintain the facility's historical fabric, architects were challenged to incorporate a modern design theme with the traditional "look and feel" of the original design. Ultimately, the confined space in Windsor's basement was transformed into an inviting, yet efficient dining atmosphere that blends well with other recently modernized campus dining facilities.

Windsor contains multiple dining areas with seating for 500. Eight service areas offer food styles ranging from typical American to Southeast Asian and Italian. Earth-toned clay tile, and oak accents and furniture define and separate dining and servicing areas, while features such as a gas-log fireplace provide the intimate look and feel of a high-end restaurant.

California State University—Channel Islands, Dining Expansion

Camarillo, California

Firm: WWCOT

Client:
California State University—Channel Islands (CSUCI); Deborah Wylie, Associate Vice President

Area of project entry category:
11,300 sq. ft.

Cost of project entry category:
$2,320,974

Cost/square foot of project entry category:
$205

Completion:
August 2007

Photographers:
Daniel Pellegrino; Fang Sui (exterior)

The program called for an 8,000-square-foot dining hall in a historic campus building.

Balancing the historic with "young and fun" was the designer's response. The features of the original California Mission-style architecture were preserved, and the interiors were enhanced with a contemporary twist to appeal to students. Unique accessories and accents with bold and vibrant colors enliven this vital campus center.

The campus occupies a former state mental hospital, so the dining facility lacked windows and admitted little daylight. The design strategy focused on maximizing new energy inside the space. Food, nutrition and its meaning in today's college world presented a challenge. In response, custom solutions for the presentation and display of more healthful food choices were integrated into the design.

The contractor, who skillfully assembled all of the parts and pieces, was instrumental in coordinating and successfully installing the multitude of components, enabling the project to meet an aggressive schedule. Millwork was integrated into the existing space, and was designed to support and enhance the interior architecture.

A dynamic array of carpet tiles brings to mind intricate Moorish tile work, and oversized, suspended custom light fixtures recall Moroccan lanterns. A wainscot of bold colors painted along each wall establishes a datum line that unifies the entire space.

Liberty University, Reber Thomas Dining Hall and Founders Food Court · *Lynchburg, Virginia*

Liberty University's Reber Thomas Dining Hall and Founders Food Court were renovated in summer 2007. Both locations on the 5,000-acre campus were in dire need of a facelift. Reber Thomas and Founders, the largest dining facilities on campus, see the majority of student, faculty and staff traffic. To keep up with the rapidly growing student body and meet the needs of an on-the-go population, Sodexo Campus Services had to provide necessary changes to these two key dining locations.

Designed by Atlantic Equipment Specialists' Lisa Millard (who was a contestant on last season's HGTV's "Design Star"), the new dining facilities feature eye-catching colors and textures. In addition to aesthetic changes, more streamlined services were taken into account in planning renovations. Restructuring the layout of both locations was necessary to provide the best possible service.

Reber Thomas Dining Hall has been the main dining facility on campus since 1992. By 2007, the interior was more than ready for an overhaul. Because the facility feeds up to 3,000 students per meal period, efficiency and flow were the primary concerns in renovation plans. The new layout allows food stations to be spread throughout the dining hall, preventing long lines and giving students easier access to the specific food items they want. In addition to a more economical design, the renovations also offered a much more appealing dining environment. Students are able to sit with large groups of friends or hide away in little nooks to study.

Founders Food Court, situated in the North Campus academic building, meets an entire different set of needs from its counterpart, Reber Thomas. The already busy location was expanded to accommodate demand, offering more dining options and doubling seating capacity. Founders Food Court now consists of six restaurants, including Chick-fil-A, Jazzman's coffee shop and Southern Tsunami Sushi.

Both locations look better than ever and have been well-received. The vibrant and existing renovations were met with rave reviews from students returning from summer break, confirming that the updates were a worthwhile investment.

Firm: Sodexo, Inc.

Client:
Lee Beaumont, Director of Auxiliary Services; Jerry Falwell Jr., Chancellor and President

Total area:
47,000 sq. ft.

Total cost:
$2.8 million

Total cost/square foot:
$60

Completion:
August 2007

Photographer:
A.J. Chan

"The dining hall has the look and feel of a brand-new facility, and service has been greatly enhanced. The food court is a cut above most commercial food courts and has completely avoided any institutional feel."

—Jerry Falwell Jr., Chancellor and President

University of Rhode Island, Hope Commons Dining Hall

Kingston, Rhode Island

"I am extremely pleased with the results. The interior is spectacular; the architects I worked with were wonderful. They were detailed, concerned and attentive."

—Kathleen B. Gianquitti, Director, Dining & Retail Food Services, University of Rhode Island

Firm: Vision 3 Architects

Client:
University of Rhode Island; Kathleen B. Gianquitti, Director, Dining & Retail Food Services

Total area:
42,000 sq. ft.

Total cost:
$17,984,142
(including furniture, fixtures and equipment)

Total cost/square foot:
$428

Completion:
August 2007

Photographers:
Warren Jagger/Warren Jagger Photography; Gregg Shupe/Shupe Studios; Frank Giuliani

Program requirements included an all-you-care-to-eat, 610-seat, main dining room; a 108-seat late-night cafe; convenience store; receiving dock; and dry and refrigerated storage.

The university wanted to provide a late-night destination for students, grab-and-go convenience for the surrounding suite-style housing, and a facility that earned LEED certification.

Understanding that residential life is an integral part of the student experience, and that dining choices have become more sophisticated in recent years, the architect sought to create a healthy dining experience that also would encourage social interaction among students.

In the design for Mainfare, the main dining hall, food is prepared in full view at four strategically placed food venues, each with its own identity and theme. Mainfare has an open market/restaurant feel, with fine detailing and a variety of seating options. Remote stations disperse activity throughout the facility, reducing wait time for food.

Adjacent to Mainfare is Rhody Market, a late night cafe. Rhody Market includes soft seating; a unique, four-sided fireplace; flatscreen TVs; and Wi-Fi. It has become the venue for university entertainment, including music, comedy and "open mike" nights.

At ground level, Rhody Mini Mart offers convenience items, snacks and grab-and-go foods.

Currently under review by the U.S. Green Building Council for LEED silver certification, the design of Hope Commons

incorporates energy-efficient lighting; a reflective roof membrane to reduce the heat-island effect; elimination of parking areas to encourage pedestrian access by staff and students; and efficient heating, ventilating and air-conditioning systems. The building is constructed from 76 percent regionally manufactured materials and products.

Situated in the heart of the campus residential district, the $18 million, 42,000-square-foot Hope Commons is the first new dining hall on campus in 45 years and serves 2,100 meals per day.

Hope Commons is steel-framed with masonry veneer. Rigid insulation in the veneer improves the thermal efficiency of the wall system. Building materials and products specified totaled 30 percent recycled content. Computers monitor the building's mechanical systems from remote locations manned by the university's facilities staff.

Since opening in September 2007, Hope Commons has become the "place to be" on campus, not only for meals, but also for socializing during other hours.

Hampton Bays Middle School
Hampton Bays, New York

Firm: BBS Architects & Engineer, PC
Associated firm: Beatty Harvey Associates

Client:
Hampton Bays Union Free School District; Joanne Loewenthal, Superintendent

Area of project entry category:
56,000 sq. ft.

Cost of project entry category:
$9,966,819

Cost/square foot of project entry category:
$178

Total area:
149,515 sq. ft.

Total cost:
$26,613,670

Total cost/square foot:
$178

Completion:
April 2008

Photographer:
Bernstein Associates Photographers

This new middle school for grades 5 to 8 was built to accommodate an increasing enrollment. It has alleviated crowding within the district's existing elementary and secondary schools. At this time, it is open partially for classroom use as construction is completed elsewhere. Four houses within the plan are supported by core functions and "specials" situated off a Main Street connecting corridor that runs the length of the building.

The new middle school is on the same site as the existing elementary school. Through careful design, the new building position and planned vehicular traffic patterns allow for efficient land use and promote student safety.

Hampton Bays Middle School has been designed with the goal of receiving LEED silver certification. It provides an efficient, healthful and environmentally aware educational environment. The exterior envelope has been insulated extensively. Promotion of indoor air quality has been a significant design factor that has guided interior materials selection, as well as mechanical system design. Products high in recycled content were selected for construction.

Northwestern University School of Law, SMART Classrooms Renovation · *Chicago, Illinois*

Firm: Griskelis Young Harrell

Client:
Northwestern University; George Langford, Director of Facilities and Space Planning

Total area:
3,470 sq. ft.

Total cost:
$1,450,000

Total cost/square foot:
$417

Completion:
September 2007

Photographer:
cnigrophotography.com

An opportunity presented itself for Northwestern University's prestigious School of Law to add much-needed first-floor classrooms when the American Bar Association, a Northwestern University tenant within the Arthur Rubloff Building, made the decision to move its museum space out of the tower portion of the building.

The School of Law challenged the design team to create two easily accessible, 75-seat, SMART classrooms. The rooms were to be grand, "showcase" classrooms built within existing space, having a 10-foot, 6-inch ceiling height and a room depth of only 36 feet.

Working closely with the director of facilities and space planning of the law school, the design team modified existing spaces in order to achieve a connection between the classrooms and the rest of the school with a new circulation "loop."

The new classrooms advance the School of Law's academic heritage of excellence by integrating the latest technology into rich, humane, light-filled environs of learning.

Kennedy-King College
Chicago, Illinois

Firm: Johnson and Lee Architects

Associated firm: VOA Associates Incorporated

Client:
Public Building Commission of Chicago; Clyde El-Amin, President

Total area:
467,000 sq. ft.

Total cost:
$100 million

Total cost/square foot:
$214.13

Completion:
July 2007

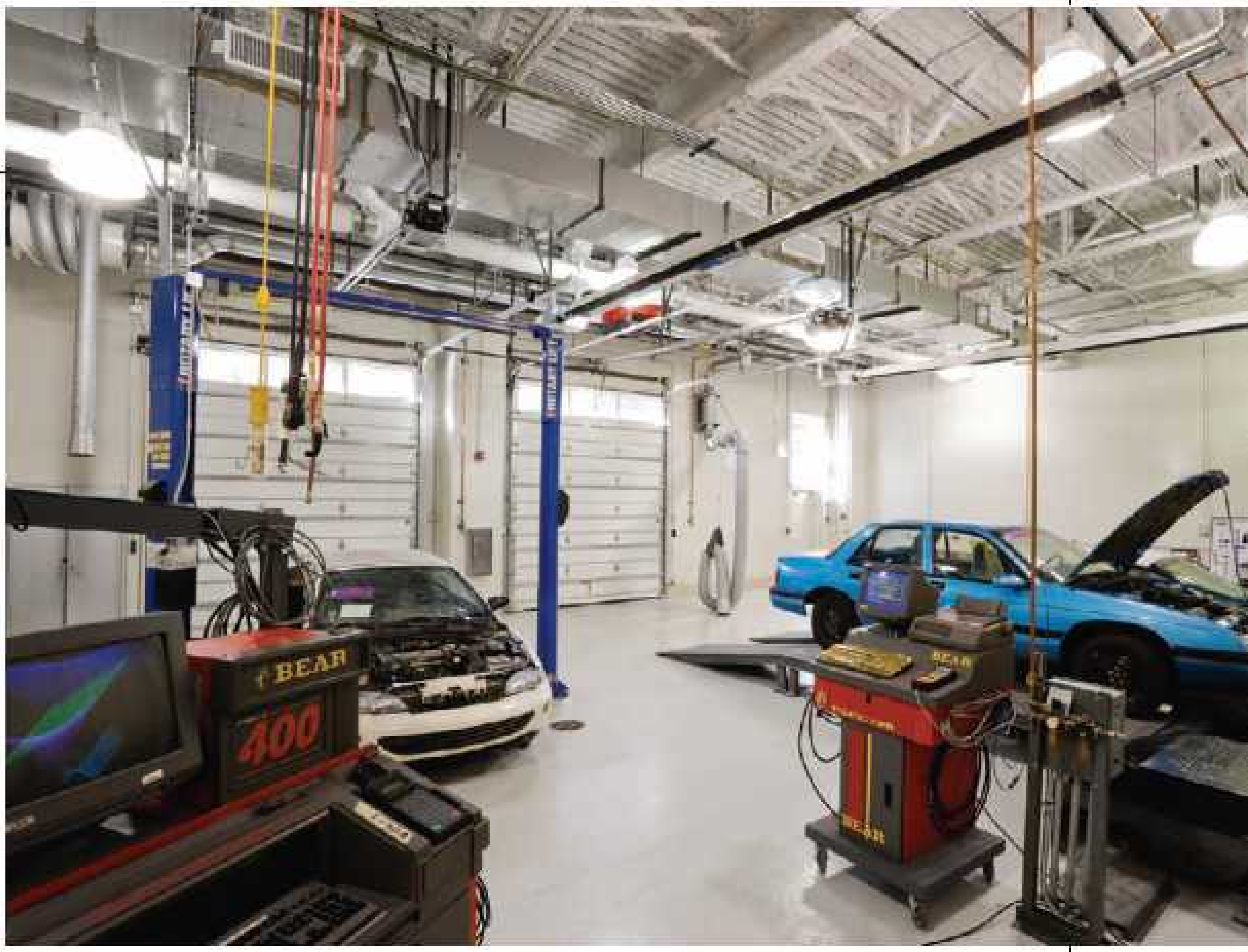
Photographer:
Ballogg Photography

Kennedy-King College, situated in the Englewood neighborhood on Chicago's South Side, is an entirely new college campus. Housed in six buildings totaling more than 467,000 square feet, this recent addition to the City Colleges of Chicago network offers coursework in a broad range of disciplines and revitalizes the local community.

The campus replaces a struggling commercial district isolated by a traffic bypass. The master plan reintroduces the street grid, increasing pedestrian and local traffic between buildings. An elevated train station and local buses take commuters to the heart of the campus. Most important, several buildings are grouped to form an inviting green quadrangle punctuated by a campus clock tower, creating a new landmark for the college and surrounding neighborhood.

Inside, Kennedy-King College offers efficient, state-of-the-art education facilities with generous windows and well-coordinated finishes. In addition to its library, 22 classrooms, and 24 science and computer laboratories, the college has six teaching kitchens and a large dining hall in its culinary-arts program, as well as television and radio studios, and printing and automotive science shops.

The campus also has facilities that enable students and faculty to reach out to the public. The culinary school has a full restaurant and bakery. The 300-seat theater has a full stage block that not only serves to teach stagecraft, but also accommodates significant theatrical and



musical productions. The child-development department includes childcare facilities to serve students and neighborhood residents. The broadcasting department is the new home of WYCC Channel 20, a local public-television station. The athletic department includes a gymnasium and a lofty natatorium with bleacher seating for competitions.

Finally, the administrative wing includes a soaring two-story atrium that welcomes all who visit the new college—a space that speaks to the energy and optimistic spirit of the entire campus.

University of Arkansas—Fayetteville, J.B. Hunt Transport Services Center for Academic Excellence · *Fayetteville, Arkansas*

Firm: Perry Dean Rogers | Partners Architects

Associated firm: Wittenberg, Delony and Davidson, Architect of Record

Client:
University of Arkansas—Fayetteville; W. Fredrick Limp, Director, Center for Advanced Spatial Technology

Total area:
120,000 sq. ft.

Total cost:
$23 million

Total cost/square foot:
$192

Completion:
July 2007

Photographer:
Timothy Hursley Photography

The J.B. Hunt Center for Academic Excellence at the University of Arkansas is a new construction project of 120,000 square feet. The project defines the northern edge of the campus' evolving McIlroy Precinct. The building houses an interdisciplinary program including several departments—business, spatial technology, computer science—and general-purpose classrooms.

The mission for the project was to provide a visually dynamic interdisciplinary environment, and to improve recruitment and retention at the university. The design team sought to create an engaging, warm, comfortable interior that would make young students in particular feel welcome. This challenged the design team to think carefully about color and material selections, intimately scaled and grand spaces, transparency and visibility, and connections to the landscape and campus at-large.

The program includes:

- •Behavioral lab.
- •70-, 125- and 200-seat auditoria.
- •Research labs.
- •Teaching labs.
- •Open general-computing labs.
- •Modular Collaborative Resource Center (MCRC).
- •Faculty offices.
- •Departmental offices.
- •Cafe and entry lobby.
- •Graduate-assistant offices and tutoring.
- •Conference and meeting rooms.
- •Language lab.
- •Outreach programs to local high school teachers.
- •Student lounges.
- •Digital editing suite.

The Hunt Center forms the edge of the McIlroy precinct, spanning a floor-and-a-half grade change. The atrium lobby space looks out over the plaza shared with the business school, communications and journalism. The main floor of the building is representative of all four departments housed in the building. There are programs from each department that create a circuit around the first floor, complemented by some of the more public program components: the MCRC, language lab, general computing labs and the cafe.

The materials are taken from the campus and regional palette: brick, metal panel, curtainwall, local stone, porcelain tile and wood panel.

EXIT

Mildred Hawk Elementary School
Corinth, Texas

Firm: SHW Group LLP

Client:
Denton Independent School District; Ray Braswell, Superintendent

Area of project entry category:
30,850 sq. ft.

Cost of project entry category:
$4,643,000

Cost/square foot of project entry category:
$150.50

Total area:	Total cost:	Total cost/square foot:
$81,989 sq. ft.	$11,904,463	$145.20

Completion:	Photographer:
July 2005	Mark Trew

Challenged by a tight budget, the architect arrived at solutions using materials such as rubber flooring and concrete for their durability, low maintenance and long life cycle. Light monitors with and without baffles, and clerestory windows bathe interior spaces and use less energy to light classroom areas.

The facade's iconic tower element stands as a beacon for education in the community. Natural light in interior instructional spaces is intended to boost academic achievement. Translucent walls in classrooms allow spatial interaction with surrounding corridors. Cafeteria and gym spaces, which may be used by the community during and after hours, are placed intentionally away from quiet academic areas and have separate access to further limit disruptions.

The eco-friendly nature of the school's setting is incorporated into the curriculum as the natural wooded area surrounding the school doubles as an outdoor learning environment. The building has state-of-the-art technologies such as classroom PCs, wireless connectivity and projection equipment, and the library and main commons share two large computer labs.

The University of Michigan—Flint, David M. French Hall Renovations · *Flint, Michigan*

Firm: SHW Group LLP

Client:
The University of Michigan—Flint; Larry King, Facilities Architect

Area of project entry category:
53,510 sq. ft.

Cost of project entry category:
$5.6 million

Cost/square foot of project entry category:
$104

Completion:
August 2008

Photographer:
David E. Rose Photography

The student always has been the center of attention at the University of Michigan—Flint, and meeting student needs through effective teaching is the university's signature objective. The "student-centered learning" classroom must take into consideration diverse learning styles, new understandings of the way students learn, and new ways of presenting ideas and information. Students learn better when they meet in classrooms that promote collaborative interaction.

The renovation of French Hall, built in 1977, brings new possibilities for learning and new technological capability to the campus. The 31-classroom renovation enables the university to meet the educational needs of students and graduates by providing an environment both technologically sophisticated and oriented toward interactive, experiential learning.

Renovations also include:

- •Necessary mechanical and electrical building infrastructure upgrades.
- •ADA-compliance upgrades.
- •Redesign of poorly planned corridors to provide effective and safe building flow indicative of a contemporary architectural expression.
- •Reconfiguration of faculty offices to eliminate inefficient space and promote interdisciplinary work of faculty and students.
- •Improved wayfinding, creating points of interest.

Technology in classrooms is addressed through extensive IT infrastructure upgrades. Every classroom is equipped with "smart cart" technology to allow for wireless computers, DVD players, data projectors and document cameras. The technology infrastructure was upgraded to serve the increased network and server needs, and to provide faster connections.

University of Houston-Downtown, Shea Street Building and Vine Street Garage · *Houston, Texas*

Firm: PGAL

Associated firm: Manhattan Construction Company

Client:
UH-Downtown College of Business; Dave Irvin, Associate Vice Chancellor/Associate Vice President, Plant Operations

Total area:
250,000 sq. ft.

Total cost:
$32 million

Total cost/square foot:
$128

Completion:
August 2007

Photographer:
Mark Lacy

The University of Houston-Downtown (UHD) Shea Street Building and Vine Street Garage project functions as the new home of the College of Business. The four-story facility combines high-tech classrooms, computer labs and lecture halls in 132,000 square feet of space, and features a glass-enclosed entrance that provides stunning views of UHD's One Main building and the downtown Houston skyline. The adjoining Vine Street parking garage is a multi-story, 500-space structure that occupies three acres.

UHD's president stressed the importance of constructing a classroom building that keeps pace with student enrollment and campus growth; the college also wanted its physical growth to match the latest technological advances and learning environments that students require in order to succeed in the competitive global marketplace.

The College of Business houses the Institute for Financial Literacy, the Center for Entrepreneurship and Family-Owned Businesses, and the Center for Supply Chain Management. Certificate courses are offered in entrepreneurship and professional land management.

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Sunrise River Elementary School
North Branch, Minnesota

Firm: ATS&R Planners/ Architects/Engineers

Associated firm: Clark Engineering

Client:
North Branch School District; Robert Stepaniak, Superintendent

Total area:
134,600 sq. ft.

Total cost:
$25 million

Total cost/square foot:
$185.74

Completion:
June 2005

Photographer:
Rick Peters/InsideOut Studios

The program requirements were to create small, personalized learning communities within a large facility and to create a vital community resource.

A pinwheel design of three mixed-grade houses is situated around a media center. Mixed-grade houses provide flexibility for future changes in enrollment. Classrooms cluster around shared group-learning areas. Technology is integrated with document cameras, audio enhancement, LCD projectors, computer work stations, portable laptop labs and smart boards.

To accommodate future changes in district grade configurations, the classroom house design can be adapted easily for kindergarten use.

An entrance colonnade provides access to public areas while keeping school functions separate.

Durable, low-maintenance terrazzo and burnished block were used throughout. Blue terrazzo borders the circulation areas, representing a "river" theme and the school's namesake. Classroom communities are distinguished by different color schemes, and soffits with signage label different spaces clearly.

To minimize energy consumption, automated lighting, occupancy sensors, variable-air-volume systems and daylight were incorporated throughout.

Sustainable qualities, timeless design and efficiency make Sunrise River Elementary School a source of community pride.

J.L. Mann High Academy
Greenville, South Carolina

Firm: BE&K Building Group, LLC

Client:
Greenville County Schools; Terry Mills, Director of Facilities

Area of project entry category:
102,993 sq. ft.

Cost of project entry category:
$13.6 million

Cost/square foot of project entry category:
$132.34

Total area:
248,260 sq. ft.

Total cost:
$30 million

Total cost/square foot:
$122.34

Completion:
November 2007

Photographer:
Brian Erkens/Reel Video and Stills

The lower level of this multi-story educational facility houses the gym/locker room, administrative area, media center, cafetorium, kitchen, related areas and classrooms. The upper level consists of classrooms and science labs.

The interior wall systems feature concrete block; office and guidance areas are metal stud walls with gypsum board. The roof system features a four-ply built-up and a standing-seam metal roof.

The finishing system includes ceiling grid with acoustical lay-in ceiling tile. Wet areas utilize a gypsum board ceiling system. The concrete slab was poured with epoxy flooring in toilet, kitchen and janitorial areas. The administration, guidance and medical center all feature carpet, and the classrooms have vinyl composition tile. The office area walls are painted gypsum wallboard. Painted concrete masonry walls and precast concrete panels are present in all other areas.

The interior doors include labeled and non-labeled flush, solid-core wood doors in hollow metal frames. The windows are aluminum storefront in the media center, cafetorium and main entry. Aluminum casement windows with insulating glass are used in all other spaces.

The Potomac School, Upper School Building

McLean, Virginia

Firm: cox graae + spack Architects

Client:
The Potomac School; Geoff Jones, Head

Area of project entry category:
15,400 sq. ft.

Cost of project entry category:
$3.5 million

Cost/square foot of project entry category:
$227

Total area:	Total cost:
105,000 sq. ft.	$23 million
Total cost/square foot:	**Completion:**
$219	October 2006

Photographers:
Craig Kuhner; Jeffrey Sauers

The undersized original Upper School was an uninspiring building with dark, narrow corridors that offered no opportunity for student gatherings and interaction. The educational program emphasized replacing corridors with circulation nodes and common areas outside the classrooms that could function as active, social connection points and informal classrooms.

The new Upper School common areas replace conventional corridors with light, color and space. Three interrelated elements form the primary circulation through the school from the main entrance: the "Gallery," the "Bridge" and the "Crossroads." The 200-foot-long "Gallery" is a linear, skylighted exhibition space with two levels of classrooms along one side, punctuated with wood-paneled resource pavilions. The connecting glass "Bridge" carries students across an outdoor quadrangle into the "Crossroads"—a 40-foot-high, glass-enclosed "town square" with a massive stone fireplace that encourages conversation and interaction throughout the day. The dining hall, library and theater work together with the "Crossroads" as the central, multi-function, schoolwide gathering place for students and faculty to come together with a strong sense of communal identity.

Marysville Getchell High School
Marysville, Washington

Firm: DLR Group

Client:
Marysville School District No. 25; Larry Nyland, Superintendent

Area of project entry category:
48,170 sq. ft.

Cost of project entry category:
$12,042,500

Cost/square foot of project entry category:
$250

Total area:
190,000 sq. ft.

Total cost:
$68 million

Total cost/square foot:
$360

Completion:
September 2010

Planned to open its doors to students in September 2010, this project encompasses the creation of a new 190,000-square-foot high school serving 1,600 students. Responding to the school district's new academy-based educational program, the school is configured as four small learning communities—each with a unique spatial identity aligned with its educational focus—and a shared community commons facility.

The architectural response to this district's educational philosophy creates flexible learning spaces that engage each student and address unique learning styles. The design of the academy buildings conjoins these spaces according to their interrelationships.

Situated in pristine, northwest forest land, the five structures are situated to minimize site impact, with buildings touching down lightly on the site's natural contours. Building arrangements create outdoor in-between spaces where the school functions as the community at-large.

A sustainable architecture of transparency ensures that students are always connected to teachers, one another, the verdant campus and the global community. Here, learning happens everywhere, with essential connectivity creating a unique sense of place evoking global consciousness.

Duquesne University, A.J. Palumbo Center Renovation
Pittsburgh, Pennsylvania

Firm: DRS Architects

Client:
Duquesne University; Charles J. Dougherty, President

Area of project entry category:
15,938 sq. ft.

Cost of project entry category:
$1,770,000

Cost/square foot of project entry category:
$111

Completion:
December 2005

Photographer:
Roy Engelbrecht

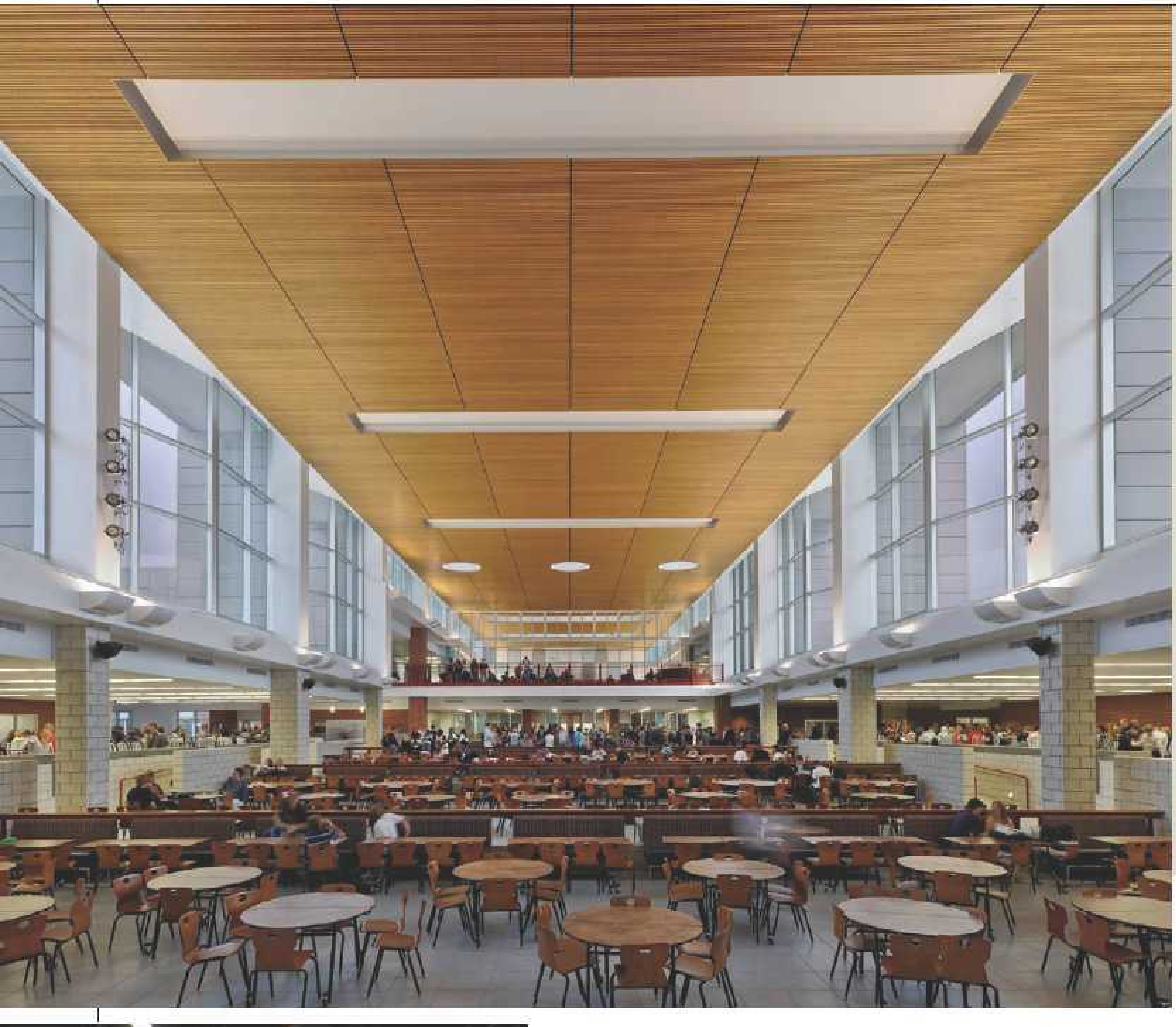
Twenty years of growth at Duquesne University made the athletic training facilities and coaches' offices tired and crowded.

A decision was made to renovate the underutilized racquetball courts and, by inserting a mezzanine level, create additional floor space within the existing structure. This third level houses the offices for the athletic director, men's and women's basketball coaches and their staffs. The area has views to an outdoor practice area, providing daylight for the offices. In addition, a welcoming reception area, conference room and coaches' locker areas were provided.

On the second level, a new weight-training area for Duquesne athletes was developed with rubber flooring, splashes of invigorating color and new high-tech equipment.

Adjacent to this area, the team trainers have new wet and dry therapy areas, equipment storage, workout areas, a private exam room and much-improved offices. The recruitment area sports a massive colonnade that shelters comfortable seating. Just outside the recruitment center, a lounge is situated conveniently to provide catered food service for events, as well as casual seating between workouts.

Parker High School
Howell, Michigan



Firms: French Associates and Perkins + Will

Client:
Howell Public Schools; Rick Terres, Assistant Superintendent

Area of project entry category:
11,000 sq. ft.

Cost of project entry category:
$1,905,086

Cost/square foot of project entry category:
$173.19

Total area:
294,964 sq. ft.

Total cost:
$54.5 million (building and site)

Total cost/square foot:
$184.77

Completion:
August 2007

Photographer:
James Steinkamp

Parker High School is a unique facility designed for use from 7 a.m. to 10 p.m.

A central spine connects six learning academies and the central commons area. Students at Parker maintain individualized schedules, and the commons provides areas for studying, dining and waiting between classes. The commons also houses a black-box stage with lights, sound and rigging.

The dining/lounging area quickly configures into an assembly arrangement for performance or community activities. The dining area provides seated tables, stand-up tables and counters with stools, with kitchen and serving areas closed off to minimize sounds and smells.

The commons loft (cyber lounge) has comfortable seating, a quiet area for studying, and connections to wired and wireless networking. The administrative offices, media center, technology learning studios, staffless school store and athletic fieldhouse are easily accessible from this central space.

Smooth concrete countertops, maximized daylighting and an impressive wood slat ceiling give the space a warm, yet industrial feel. Integrated principles of sustainability significantly improve Parker's energy-efficiency and durability.

Johnson County Community College, Regnier Center for Business and Technology · *Overland Park, Kansas*

Firm: Gould Evans

Client:
Johnson County Community College; Jim Freed, Director of Facilities Planning

Area of project entry category:
150,000 sq. ft.

Completion:
July 2007

Photographers:
Timothy Hursley; David Reid

Creating a high-tech collegiate learning facility devoid of "techy shtick" requires a paradigm shift to "ambient technology." Various cues throughout the Regnier Center indicate how this human-centered building is very supportive of technology connectedness. Technology kiosks offer directional aids, schedules and course offerings. A wireless network offers coverage over the entire interior domain. A 24/7 open lab provides students access to higher bandwidths and specialty software not contained on their personal computing devices.

Yet, the building also creates a timeless environment that inspires imagination. Cognitive connections to the natural environment are established with expansive views and natural materials such as limestone, granite and wood. Daylight is harvested deep into the interiors, enriching the natural textures of these materials.

Preservation of social learning and social intelligence is at risk as technological communications overtake students' lives. The common spaces feature furnishings, materials, daylight and view streams that encourage students to linger on campus. Circulation networks break the "auto-pilot" routine, leading people through a variety of learning neighborhoods to increase their social capital. Supporting the college's mission to bring art to the people, the public spaces also support the college's various collections of print works, photography, paintings and Native American artifacts. High ceilings, integrated track lighting and neutral wall finishes make the public spaces even more desirable places to continue learning beyond traditional classroom instruction.

South Lyon East High School
South Lyon, Michigan

Firm: Integrated Design Solutions, LLC

Associated firm: Granger Construction Co.

Client:
South Lyon Community Schools; William A. Pearson, Superintendent

Area of project entry category:
41,892 sq. ft.

Cost of project entry category:
$6,367,584

Cost/square foot of project entry category:
$152

Total area:
315,560 sq. ft.

Total cost:
$61 million

Total cost/square foot:
$193

Completion:
September 2007

Photographer:
Laszlo Regos Photography

South Lyon East High School's design committee used research, best-practice models and input from students, staff, parents, school board and community members to develop the school's philosophy: The educational process takes place in an inclusive learning community that supports the integration of academics, professional-technical pathways, and individual interests and goals of its students.

Visitors are welcomed into the light and airy commons, which also serves as the student dropoff, social and interactive gathering space, a large collaborative academic space and cafeteria. An expansive kitchen supports all functions.

Rich wood tones, durable burnished block and earthy fabrics lend a business-like feel to the media center. Situated adjacent to the commons, the media center is available to students any time of the day. The sweeping circulation desk is placed in the middle of the space to provide access for assistance and a safe environment for learning.

A separate theater entrance and parking lot allow for evening and weekend performances without sacrificing security to the remainder of the school. Eight-hundred seats huddle around the stage, and no one is more than 90 feet from the action. The gallery-style theater creates an exciting space and destination for the community to enjoy students' creative efforts.

One of the keys to academic success for each individual pathway is a dedicated Pathway Project Studio. There are four in the building, situated at the intersection of the academic and pathways classrooms/spaces. Tables can be arranged into countless configurations, and computers ring the outside wall.

Memorial Junior High School
Lansing, Illinois

Firm: JMA Architects

Client:
School District 158; Veronda Cottle, Superintendent

Area of project entry category:
8,500 sq. ft.

Cost of project entry category:
$1,003,000

Cost/square foot of project entry category:
$118

Total area:	**Total cost:**
119,600 sq. ft.	$18,712,088
Total cost/square foot:	**Completion:**
$156.46	April 2009

Photographers:
Allison Maciejewski; Jerry Maciejewski; Felipe Cajigas

The educational requirements for this 119,600-square-foot, $19 million addition were clear: accommodate growing enrollment, organize grade levels into communities, and create an open and welcoming space.

Memorial Junior High School was constructed in 1945. In 2005, the district decided to move forward on a three-phase, 3½-year expansion project. At completion in spring 2009, only 15,500 square feet of the original building will remain.

The addition includes 27 new classrooms, nine science labs, a new gymnasium, multipurpose room, art and band room, and new administrative offices. The new space is divided into three communities for sixth, seventh and eighth grades. Each consists of a spacious commons area, nine classrooms, three science labs, storage space and restrooms.

The challenge was to have the facility remain in full use, with minimal disruption, while incrementally moving students and staff to the new areas and demolishing much of the original building. Thus far, the challenge has been met, the schedule has been kept, and the budget has been maintained.

Anderson University, Flagship Center
Anderson, Indiana

Firm: K.R. Montgomery & Associates Architecture & Interior Design

Associated firm: Techedvise

Client:
Anderson University; Sena Landey, Vice President for Finance/Treasurer

Area of project entry category:
10,142 sq. ft.

Cost of project entry category:
$1,632,862

Cost/square foot of project entry category:
$161

Total area:
53,000 sq. ft.

Total cost:
$8.5 million

Total cost/square foot:
$161

Completion:
August 2007

Photographers:
Dale Pickett; Susan Fleck Photography

Connected to a high-profile business incubator, the three-story, 53,000-square-foot Anderson University (AU) Flagship Center needed to house a diverse mix of users: students of AU's new "live-in" MBA program, undergraduates of Purdue University's College of Technology, business professionals, and various administrators and faculty. Because of this, the design incorporated common spaces that would enhance the synergy among groups.

In the main concourse, abundant daylighting offers an open and connected feel, and groupings of lounge furniture promote spontaneous connections and impromptu meetings. Combining warm wood finishes, sleek metal accents and simple lines helps fuse the academic and professional nature of the building. The cafe's central location directly off the concourse enables easy access for nearby professionals desiring a quick bite to eat, space for evening networking events, and yet another connecting point for all users.

Opportunities for connection are spaced throughout the building, from small student lounges and private conference areas to the larger banquet hall and auditorium. Designed to host conferences, professional meetings and academic lectures, the auditorium's state-of-the-art technology, including dime-sized microphones built in at every seat, promotes more effective communication. Its semicircular layout allows the 160-person space to feel more intimate and offers face-to-face sightlines.

Filled with activity both day and evening, this multi-faceted education center exudes a sense of energy and connects its users.

Duncanville High School
Duncanville, Texas

Firm: SHW Group LLP

Client:
Duncanville Independent School District; Alfred Ray, Superintendent

Area of project entry category:
125,600 sq. ft.

Cost of project entry category:
$11,932,000

Cost/square foot of project entry category:
$95

Total area:
863,137 sq. ft.

Total cost:
$93 million

Total cost/square foot:
$107.75

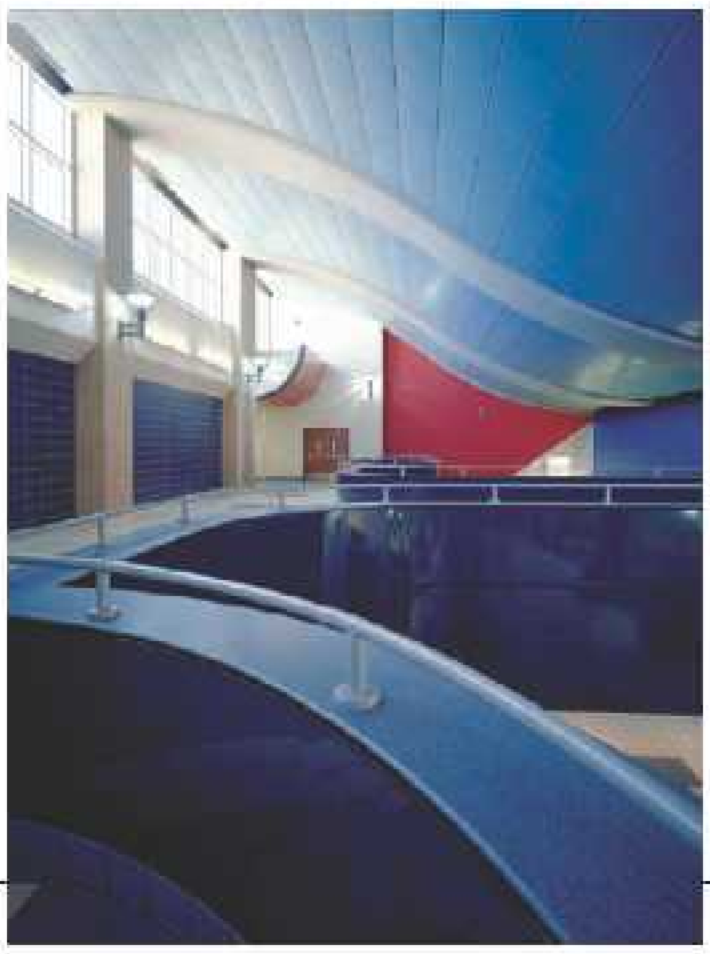
Completion:
August 2005

Photographer:
Mark Trew

This high school is home to both a ninth-grade community and grades 10 to 12. The communities are separated by a central elective and academic core called the "Central Academic District." Situated along the school's main corridor are state-of-the-art elective opportunities for all students, including culinary arts, agriculture, building trades, photography, auto body/technology and more. Large-group instruction areas, multipurpose lecture rooms and instructional resource centers that overlook the campus library also are featured prominently in the school's design.

Many spaces boast natural light, and it is most abundant in the main corridor. Creative treatments of durable materials on walls and ceilings add excitement and wayfinding devices to the interior. Security and academics are decentralized to ensure the school's size has no impact on safety or curriculum delivery.

The building has electronic whiteboards, an innovative wireless network that connects the school to other buildings in the district, a Category 6 voice and data network, and projection systems with 100-inch diagonal screens in all classrooms.



Theodore G. Davis Middle School
Waldorf, Maryland

Firm: SHW Group LLP

Client:
Charles County Public Schools; James E. Richmond, Superintendent

Area of project entry category:
26,647 sq. ft.

Cost of project entry category:
$5,382,694

Cost/square foot of project entry category:
$202

Total area:	**Total cost:**
128,000 sq. ft.	$25,870,000
Total cost/square foot:	**Completion:**
$202	August 2007

Photographer:
Vidyuta Rangnekar

Theodore G. Davis Middle School is a two-story building enriched with daylight, the latest teaching technology and sustainable features that minimize the school's operating costs. The design incorporates the school-within-a-school concept for each grade level. Main Street connects the two houses with central support spaces, and each grade level is situated in a separate house.

The building incorporates sustainable-design concepts such as operable, low-E windows in every classroom that minimize the heat gain from sunlight and allow for natural ventilation during the spring and fall. Electrical lighting and power systems use energy-conservation techniques, and individual room controls allow for temperature regulation.

The middle school is part of a 280-acre educational complex comprised of an elementary and high school; a community-service complex; and a library, fire station and police station. The entire campus is wireless. Every classroom in the school is equipped with an LCD projector tied to the school network, and each instructional area has distance-learning and videoconferencing capabilities.

Centennial Elementary School
Edmond, Oklahoma

Firm: The Stacy Group

Client:
Edmond Public Schools; David Goin, Superintendent

Total area:
73,008 sq. ft.

Total cost:
$10,157,654

Total cost/square foot:
$139.13 (including site costs)

Completion:
July 2007

Photographer:
Imageworks Studio

Opening in the year of the state's centennial, the newest elementary school in the district took on the name Centennial Elementary School. Nestled in a wooded site, the building respects and reflects the natural setting by integrating natural materials, maintaining trees and natural features, and planting native grasses. The commons spaces are designed to maximize daylighting and views toward the trees.

The school includes items that are designed to teach the history of Oklahoma. Water-jet-cut wall and floor tile depict the state flag, seal and adopted state symbols. The state song is featured in the commons, and the state map, including the counties, is cut into the carpet in the media center. Future additions are to include more state symbols.

The elementary serves grades K to 5, and is designed in a pod layout for maximum teaching flexibility and security. Each pod walks out to an outdoor classroom area. The school is master-planned for future additions and to meet the demands of this growing district.

The Harpeth Hall School, Hortense B. Ingram Upper School
Nashville, Tennessee

Firm: Street Dixon Rick Architecture, PLC

Client:
The Harpeth Hall School; Ann Teaff, Head of School

Area of project entry category:
12,800 sq. ft.

Cost of project entry category:
$2,560,000

Cost/square foot of project entry category:
$200

Total area:	**Total cost:**
31,625 sq. ft.	$6,341,350
Total cost/square foot:	**Completion:**
$200	January 2007

Photographer:
Tom Gatlin

Harpeth Hall School leaders strive for national excellence, a goal expressed in the architecture of the Upper School, which involved transforming the existing facility with a combination of new spaces and renovation. A cohesive design with a theme of openness reinforces the discussion-oriented teaching approach.

This project emphasizes collaboration and meets the challenge of connecting three existing buildings at various floor elevations.

The spacious connecting corridor, both elegant and inviting, becomes the communications spine and creates visibility and interaction. Cove lighting supplements extensive daylighting from the skylight above. Interior office windows add natural light and invite students to enter.

Finishes are welcoming, cheerful and warm. They mirror the natural landscape, including rusty-brown carpet hues; robin's egg blue, ocher and khaki walls; white trim; bamboo flooring and light wood furniture.

State-of-the-art classrooms and gathering spaces feature operable windows showcasing park-like views. Dimmable fluorescent fixtures, daylighting and carefully positioned indirect lighting save energy and eliminate laptop screen glare.

Otsego High School
Otsego, Michigan

Firm: TowerPinkster

Client:
Otsego Public Schools; Dennis M. Patzer, Superintendent

Area of project entry category:
24,700 sq. ft.

Cost of project entry category:
$2.3 million

Cost/square foot of project entry category:
$93

Total area:	Total cost:
208,800 sq. ft.	$28.2 million
Total cost/square foot:	**Completion:**
$135	September 2007

Photographer:
Justin Maconochie

Otsego Public Schools wished to provide the city with a new flagship high school to restore pride and reinvigorate the community.

The 208,800-square-foot facility features an impressive entrance that opens onto a two-story, 24,700-square-foot commons area. It serves as the unifying space among three zones: academics, fine arts and athletics. The commons area is multifunctional and combines spaces for study and reflection, dining, project areas and casual interaction.

The circulation path boasts a pedestrian bridge and large, two-story, glass curtainwall. The south-facing glass floods the space with daylight from a supervised and self-contained outdoor courtyard.

Carefully chosen interior materials create individual "store-fronts" for access to the media center, administrative offices, counseling, the school store, gymnasiums, the auditorium and cafeteria. The space fosters social interaction and impromptu learning, and its flexibility provides for a variety of large- and small-group study opportunities.

The overall design philosophy reflects the community's pride and celebrates the heritage of the original 1920s high school. Although the new, two-story space was not a feature in the former high school, it has not added to the school's energy use. In fact, the new facility is operating more efficiently than the former high school.

Ron Clark Academy, Classroom Building
Atlanta, Georgia

Firm: Urban Studio, Inc.

Client:
Ron Clark; Mehari Kassa, Director of Development

Area of project entry category:
4,000 sq. ft.

Cost of project entry category:
$780,000

Cost/square foot of project entry category:
$195

Total area:
20,000 sq. ft.

Total cost:
$3.5 million

Total cost/square foot:
$175

Completion:
July 2007

The Ron Clark Academy (RCA) classroom building interiors were selected to inspire students with a fun and lively place to learn.

The reception area is really a core for the school, bringing students, teachers and visitors together. Here, ideas and fun are shared. The space captures the industrial spirit of the 1920s warehouse building by leaving the structure, brick walls and ductwork exposed.

This gathering place features an electric blue corkscrew slide, custom blue and striped bamboo floors, and a stair of coins from every country in the world. The bold colors, stair, sculptures and wall murals emphasize the international theme of the school. Travel is an important part of the curriculum at RCA.

The concept for the entrance door to Mr. Clark's classroom comes from the children's cartoon Scooby Doo.

At the end of the building's second-floor hallway is a view of the "library." Upon entering the space, it looks like a library right out of a haunted mansion, with a fireplace, wood wall paneling, a velvet sofa and, of course, library shelves. As a person rotates the torchlight on the wall, the bookshelf opens and behind it is Mr. Clark's room.

The main challenges to the project were life-safety and technical issues. An alternative means of egress was accomplished via a side corridor that empties into the main corridor beyond the "library" area, leaving no clues as to what is really at the end of the hall.

University of Oklahoma—Tulsa, Schusterman Center Campus
Tulsa, Oklahoma

Firm: Rees Associates, Inc.

Client:
University of Oklahoma—Tulsa; Gerard Clancy, President

Area of project entry category:
128,000 sq. ft.

Cost of project entry category:
$17 million

Cost/square foot of project entry category:
$132.81

Completion:
June 2007

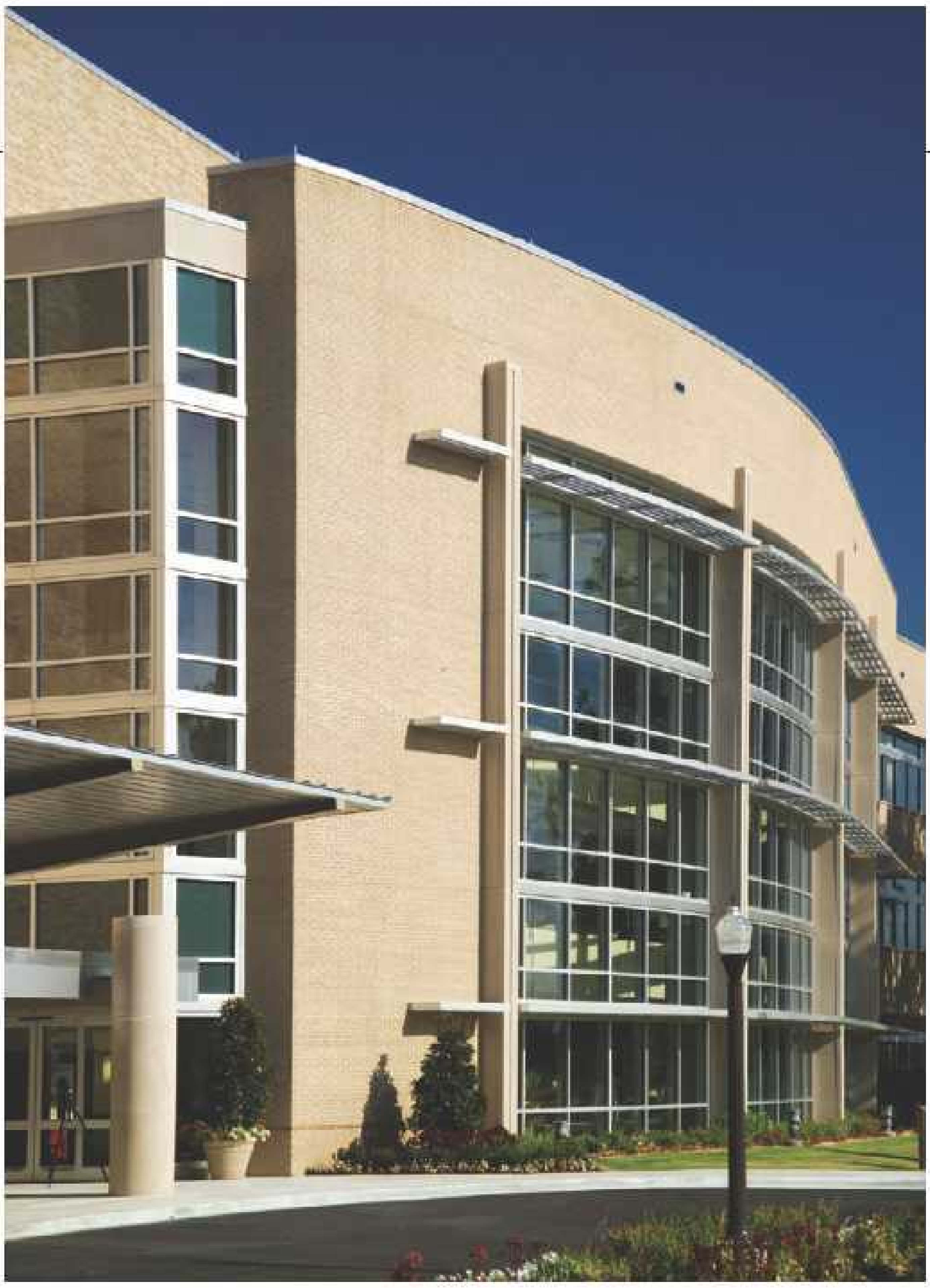
Photographer:
Joseph Mills/Joseph Mills Photography

The Schusterman Clinical Research Building is the first major construction project to the Tulsa-based University of Oklahoma campus since its acquisition. The building and associated parking structure are compatible with the existing character of campus while incorporating architectural references to the primary University of Oklahoma Campus in Norman.

The facility has 128,000 square feet of research space for the University of Oklahoma's College of Medicine—Tulsa. The building is designed to accommodate various disciplines, including diabetes, pediatrics and community-outreach programs for psychiatric and chronically ill patients. Additional patient services include a pharmacy, imaging department and laboratory. An addition with a procedure center is under design.

The primary focal point of the facility is the grand three-story atrium. Encased by a sweeping outer glass wall, the atrium creates a sense of openness and a connection to the outdoors that is continued throughout the remainder of the clinic. To accommodate the large families of many of the patients, each clinic's sub-waiting area opens onto a shared concourse that overlooks the open atrium area. The open, airy design of the Schusterman Center contributes directly to the bright and cheery interior environment.

Each department is broken into "patient pods" with dedicated spaces, including waiting, nurse stations, storage, exams, consultation/education rooms and other support services. Because of this design, the departments lose the "bus depot," institutional feel that many teaching facilities have.



"The new Schusterman Center clinic facility has transformed our clinical practice, health-education programs and our research efforts. The design has allowed us to practice team-based care and has provided a healing and hopeful environment for our patients. New students and faculty physicians have gravitated to the facility as a place where they want to do the good work they do on a daily basis."

—Gerard Clancy, MD, University of Oklahoma College of Medicine, Tulsa

Baylor University Medical Center, Caruth Labor and Delivery Center · *Dallas, Texas*

Firm: Rees Associates, Inc.

Client:
Baylor University Medical Center; Janet Hancock, Director of Prenatal Services

Area of project entry category:
22,000 sq. ft.

Cost of project entry category:
$625,000

Cost/square foot of project entry category:
$28.40

Completion:
February 2006

Photographer:
Craig Blackmon/BlackInk Photography

The Caruth Labor and Delivery Center provides the renowned Baylor University Medical Center with a new environment to lead its obstetrics department into the future. This new environment enabled and supported the staff in strengthening its reputation as "the best place in Dallas to have a baby" in the highly competitive marketplace.

The architect met the goal of giving the unit not only a new look, but also a new environment for the delivery of care. This environment was designed to reflect the excitement and anticipation that comes with welcoming a new baby, but also fosters a sense of comfort and "home." Working with physicians and staff, the architect created a timeless finish palette mindful of the maintenance this type of unit requires. One aspect of the design was to create a gallery of photographic artwork as a tribute to babies born at Baylor. The photography also is featured throughout the unit.

The project encompassed 22,000 square feet and includes a prenatal diagnostic center, obstetric observation/triage unit and delivery center. It had 12 phases in response to staff concerns of minimizing disturbance during construction.

Texas Tech University System, Student Wellness Center

Lubbock, Texas

Firm: Texas Tech University System Facilities Planning and Construction

Associated firm: F&S Partners

Client:
Texas Tech University System; Mike Ellicott, Vice Chancellor

Area of project entry category:
43,804 sq. ft.

Cost of project entry category:
$9,950,000

Cost/square foot of project entry category:
$227

Completion:
March 2007

Photographers:
Jon Thompson/JQT Photo Graphics; Artie Limmer

The Student Wellness Center at Texas Tech University provides a one-stop facility for all of the university's student-wellness programs, including clinical and mental-health functions, and some student support space. Level one is organized around an indoor Main Street, the primary pedestrian walk that directs patients to the various clinics, labs, radiology and pharmacy.

The primary-care clinic area is designed in modules, giving the wellness center the flexibility to accommodate a variety of specialty clinics. Ancillary services are adjacent to each other for better circulation and separate operations.

The counseling center on level two features generous offices, a private waiting area, and a full array of testing and group therapy, conference and meeting rooms. The counseling offices are situated along the perimeter of the building, making the most of natural light, while the rooms for observation, study and treatment are situated on the interior for a more controlled atmosphere. For privacy, discreet entrances and private waiting areas serve the clinics, counseling facilities and support departments.

Flashpoint, The Academy of Media Arts & Sciences
Chicago, Illinois

Before

Firm: Barbara S. Pollack & Associates
Associated firm: Valerio Dewalt Train Associates

Client:
Flashpoint, The Academy of Media Arts & Sciences;
Howard A. Tullman, President/CEO

Total area:	**Total cost:**
73,000 sq. ft.	$5.1 million
Total cost/square foot:	**Completion:**
$70	September 2007

Photographer:
Nick Novelli

Housed in the historic Burnham Center in the heart of Chicago, Flashpoint has program spaces that include classrooms, cinema/sound/game/animation labs, recording/sound design studios, Foley studio, film/sound-editing suites, a directing/lighting stage, screening room, information commons, a motion-capture studio, advanced-technology conference studio and student lounges.

The minimalist design was inspired by the drive-in theaters of the golden age of cinema. Simple white surfaces become canvases for student ideas, activating and charging the environment with multimedia images. Creativity and inspiration is enhanced further by the vibrant palette of selected works of CEO, Howard Hullman's award-winning contemporary art collection.

Flashpoint was designed to receive LEED silver certification from the U.S. Green Building Council. Green strategies were incorporated to reduce the energy profile, reduce water usage, and create a more healthful environment for students and faculty. Energy-reduction strategies include daylight harvesting, efficient LED light fixtures and Energy Star appliances, along with advanced lighting and HVAC controls. Water usage is reduced primarily through two-button toilets. Indoor air quality is improved by low-VOC sealants, carpeting, paint and millwork.

University of Houston, School of Communication, Computer Lab Renovation · *Houston, Texas*

Firm: Brave / Architecture

Associated firms: GG Contracting, General Contractor; Hirsch & Associates, Inc., MEP Engineer

Client:
University of Houston, School of Communication; Dave Irvin, Associate Vice Chancellor/ Associate Vice President, Plant Operations

Area of project entry category:
5,500 sq. ft.

Cost of project entry category:
$418,707

Cost/square foot of project entry category:
$76

Completion:
August 2007

Photographer:
Kennon Evett/Kennon Photography

Before

Several years ago, in order to successfully cater to the University of Houston's Communication Technology Center's (CTC) 1,700 undergraduate and 100 graduate students, the dean of the College of Liberal Arts and Sciences began an ultra-modern remodeling campaign to improve the layout, infrastructure and help desk.

The renovation is a collaborative effort among UH's Facilities Planning and Construction department, CTC staff members, the architect and the general contractor. Today, the revitalized center enjoys phase I renovations, which include state-of-the-art touchscreen technology, two computer laboratories, one conference room, an open lab work space, two collaborative work stations with 42-inch touchscreen LCD monitors, and a centralized support team. It also includes a climate-controlled server room, an electrical and work room, and offices for administrative staff.

The CTC first opened as a centralized computing center in 1997 when the school's dilapidated darkrooms and classrooms were modified to accommodate computers. Though lacking in aesthetics, the facility saw its usage nearly double during the first two years of operation.

Duke University, Adaptive Reuse of Old Art Museum

Durham, North Carolina

Firm: Clark Nexsen Architecture & Engineering

Client:
Duke University; John Pearce Jr., FAIA, University Architect

Area of project entry category:
53,614 sq. ft.

Cost of project entry category:
$6.5 million

Cost/square foot of project entry category:
$121.24

Completion:
August 2007

Photographers:
John Wadsworth Photography; Clark Nexsen (before)

The design philosophy for the renovation of the Old Art Museum at Duke University was to integrate the building's past with its present. The goal was not to completely restore this building to its original 1929 form, but instead to pull all the pieces together from its beginning, its transformation in the '60s, and its current characteristics.

In keeping with this philosophy, the exterior facade was restored to its original 1929 appearance, and two interior stairs were recreated in their original locations and designed to incorporate historic elements. The original high ceilings were maintained to accentuate the large, historic windows. Interior renovations included new terrazzo floors, wood mouldings and flat, arched openings to replicate a Georgian-revival classroom building.

The Old Art Museum at Duke University stands as a welcoming, history-filled home to the offices and classrooms of the College of Arts & Sciences. The facility was designed to be flexible in the future by accommodating classrooms and offices for additional liberal-arts programs. The two main floors provide about 30,000 square feet of the building's total 53,614 square feet.

The museum is seeking LEED silver certification from the U.S. Green Building Council.

Before

Beverly Vista Elementary School, Building B, Auditorium Preservation and Expansion · *Beverly Hills, California*

Firm: Dougherty + Dougherty Architects LLP

Client:
Beverly Hills Unified School District; Kari McVeigh, Superintendent

Area of project entry category:
25,000 sq. ft.

Cost of project entry category:
$18 million

Cost/square foot of project entry category:
$720

Completion:
October 2007

Photographers:
RMA Photography; Dougherty + Dougherty Architects

Building B is the last original structure on the Beverly Vista campus, built in the 1920s. After significant planning, district officials decided to preserve and renovate the historic auditorium and adjacent tower, and build a new facility to complement the historic theme while providing the needed programs in a contemporary space.

The auditorium project included restoration of the historic exterior elevations and the hand-painted bell tower ceiling to its original condition. The new space provides 11 new classrooms including a band room, choral music room, two language labs and one reading room.

The facades facing Charleville Boulevard to the North and Rexford Drive to the east are the most visible and have been developed in a manner sensitive to the surrounding neighborhood. The new facades of Building B and its reconstruction have been developed with original materials and decorative elements, preserving the symbolism of Beverly Vista as a neighborhood icon.

Before

New York University, Steinhardt School of Culture, Education, and Human Development, Department of Speech-Language Pathology and Audiology · *New York, New York*

Firm: Gensler

Associated firms: Plaza Construction Corporation, Contractor; WM Group, MEP Engineer; SBLD Studio, Lighting Designer; Cerami & Associates, Acoustic and Audiovisual Consultants

Client:
New York University; Joseph Giovannelli, Associate Dean for Administration and Finance

Area of project entry category:
8,240 sq. ft.

Cost of project entry category:
$2,670,000

Cost/square foot of project entry category:
$324

Completion:
February 2007

Photographer:
Adrian Wilson

Before

NYU Steinhardt's Department of Speech-Language Pathology and Audiology occupies a full floor of a 19th-century landmark building near Washington Square Park. The renovated area houses a supervised clinic, research labs, seminar rooms and departmental administrative facilities in a compact, 9,000-square-foot footprint. The design successfully addresses and integrates the needs of three unique population groups: faculty and administrators; student clinicians; and patients, who range in age from infants to senior adults.

The state-of-the-art speech-language hearing clinic provides supervised training for students. The use of advanced audiovisual systems, such as videotaping patient sessions, plays an important role in diagnostic and therapeutic services. The architect worked closely with a lighting designer and acoustic consultant to develop a design that integrates audiovisual technology seamlessly into the space—using it strategically to bridge between physically unconnected labs and learning rooms. This allows for increased flexibility and capacity.

Outdated facilities and limited technology curtailed the breadth of the department's curriculum. The new design not only advances possible services and allows for enrollment growth, but also im-

"I am looking forward to increasing the number of patients and types of services that the clinic treats each year. Last year, graduate students logged more than 2,500 hours treating patients. Now, with more therapy rooms, they will be able to assess and treat even more people."

—Celia Stewart, Department Chair and Professor

proves the quality of the learning and clinic experience.

Large, open areas at either end of the space benefit users with natural light and sweeping city views. The east reception area looks out on the buzz of Lower Broadway, and a student study area and pantry on the west side looks out over a vast green space. Finishes were selected to appeal to a broad age group and to entice the senses. At the main entry, the clinic observation room is clad in sculptural plaster panels that evoke sound waves. Similarly, the audiology observation and testing room, situated near the student entrance lobby, is flanked by red and white graphic wave patterns. The color and texture of architectural elements, graphics and furnishings energize the space and the senses.

Metuchen High School
Metuchen, New Jersey

Before

Firm: EI Associates

Client:
Metuchen School District; Theresa J. Sinatra, Superintendent

Area of project entry category:
117,000 sq. ft.

Cost of project entry category:
$21,755,862

Cost/square foot of project entry category:
$186

Completion:
April 2008

This comprehensive building and site-improvement project began with a master plan that studied the options of renovating vs. replacing the 40-year-old facility. The district decided to renovate the entire 117,000-square-foot building. The renovations provided health and safety upgrades, enhanced interior environmental conditions and improved energy efficiency. A new fitness center functions as a shared facility used by students during school hours and local YMCA members during off-hours. An athletic fields master plan determined the appropriate configuration, usage and maintenance of the fields.

Because of the complexity of the building renovations, a comprehensive, 12-phase logistical plan spanning 18 months was created. The project included all classrooms; science rooms; the art room; home economics; the auditorium; media center; gymnasium; a new wellness center; the cafeteria; administrative areas; corridors; restrooms; a new lobby; new elevator; roof, window and door replacements; exterior masonry and brick restoration; ADA improvements; replacement of all finishes; replacement of all mechanical, electrical and plumbing systems; a new fire-protection system; new technology infrastructure; athletic fields; and site improvements.

B. Reed Henderson High School, Media Center

West Chester, Pennsylvania

Firm: Gilbert Architects Inc.

Client:
West Chester Area School District;
Alan C. Elko, Superintendent

Area of project entry category:
6,500 sq. ft.

Cost of project entry category:
$825,500

Cost/square foot of project entry category:
$127

Total area:
287,351 sq. ft.

Total cost:
$40,471,330

Total cost/square foot:
$140

Completion:
September 2005

Photographers:
Nathan Cox Photography; Gilbert Architects Inc.; Susan Beaty/Gilbert

Before

The renovation of the Henderson media center offered unique challenges in designing a functional, inviting environment in an existing space. The space had to be supervised easily, as well as offer resources and materials for interactive and research-based learning.

To establish control immediately upon entering the room, the circulation desk is situated centrally within the open area of the room, which enables the librarian to supervise all areas of the space from one location.

The stack areas are situated around the perimeter with seating interspersed for leisurely reading. The main body of the media center is an open area with tables that can be used in an instructional classroom setting for individual or group activities. A bank of computers provides an area for Internet-based research and computer work.

In addition to overhead lighting, indirect lighting and task lighting at the tables, and the diffused natural light in the room via windows and skylights, this once confining room with low ceilings now offers a comfortable environment conducive to learning.

The University of Akron, Robertson Cafe
Akron, Ohio

Firm: Hasenstab Architects, Inc.

Client:
The University of Akron; Frank Horn, Director of Architectural Design & Construction

Area of project entry category:
25,300 sq. ft.

Cost of project entry category:
$4 million

Cost/square foot of project entry category:
$158

Completion:
August 2007

Photographers:
Scott Pease/Scott Pease Photography; Marge Zezulewicz/Hasenstab (before)

The architect worked with The University of Akron to create an exciting, inviting environment for students and visitors dining at Robertson Cafe. The existing facility, which was dated and in need of an upgrade, was renovated to include various food stations in a marketplace concept where food preparation is part of the entertainment.

Distinct seating areas provide an array of dining experiences. "Rob's" also includes a convenience store and an after-hours space, which doubles as a performance stage. This stage is part of an indoor passage, open 24 hours, which connects primary access points to the facility and solves one of the major design issues—a six-foot change in elevation between entries.

The project scope also included kitchen renovations; mechanical, electrical and fire-protection systems upgrades; and a complete re-imaging of the facility—from the cafe's logo to architectural finishes.

The $4 million project, encompassing 15,000 square feet of dining area as well as adjacent renovated spaces, was completed over four months during summer break.

Before

Rasmussen College—Eden Prairie Campus
Eden Prairie, Minnesota

Firm: Paulsen Architects

Client:
Rasmussen College; Larry Waite, Vice President of Real Estate

Area of project entry category:
21,340 sq. ft.

Completion:
July 2006

Photographer:
Dean Riggott Photography

Situated just 20 miles from downtown Minneapolis in a growing suburb, Rasmussen College wanted to remain in the area, but that meant having to retrofit an existing office building into a campus for students.

Rasmussen also wanted to house The Hub, the center for technology education in Minnesota, in the same building.

The renovation involved a complete interior demolition, working around the existing entry, bathrooms and loading docks.

Core student services such as the library and media center are near the entry, providing ultimate convenience. The library was designed to maximize light and encourage study groups. The former loading dock was transformed into a student lounge. The garage door has become an enormous window, flooding the space with light. Rasmussen's online services and call center are situated in the back of the space, which required features to fulfill its own unique space needs.

Before

The University of Michigan—Flint, David M. French Hall Renovations · *Flint, Michigan*

Firm: SHW Group LLP

Client:
The University of Michigan—Flint; Larry King, Facilities Architect

Area of project entry category:
53,510 sq. ft.

Cost of project entry category:
$5.6 million

Cost/square foot of project entry category:
$104

Completion:
August 2008

Photographer:
David E. Rose Photography

The student always has been the center of attention at the University of Michigan—Flint, and meeting student needs through effective teaching is the university's signature objective. The "student-centered learning" classroom must take into consideration changing learning styles, new understandings of the way students learn, and new ways of presenting ideas and information. Students learn better when they meet in classrooms that promote collaborative interaction.

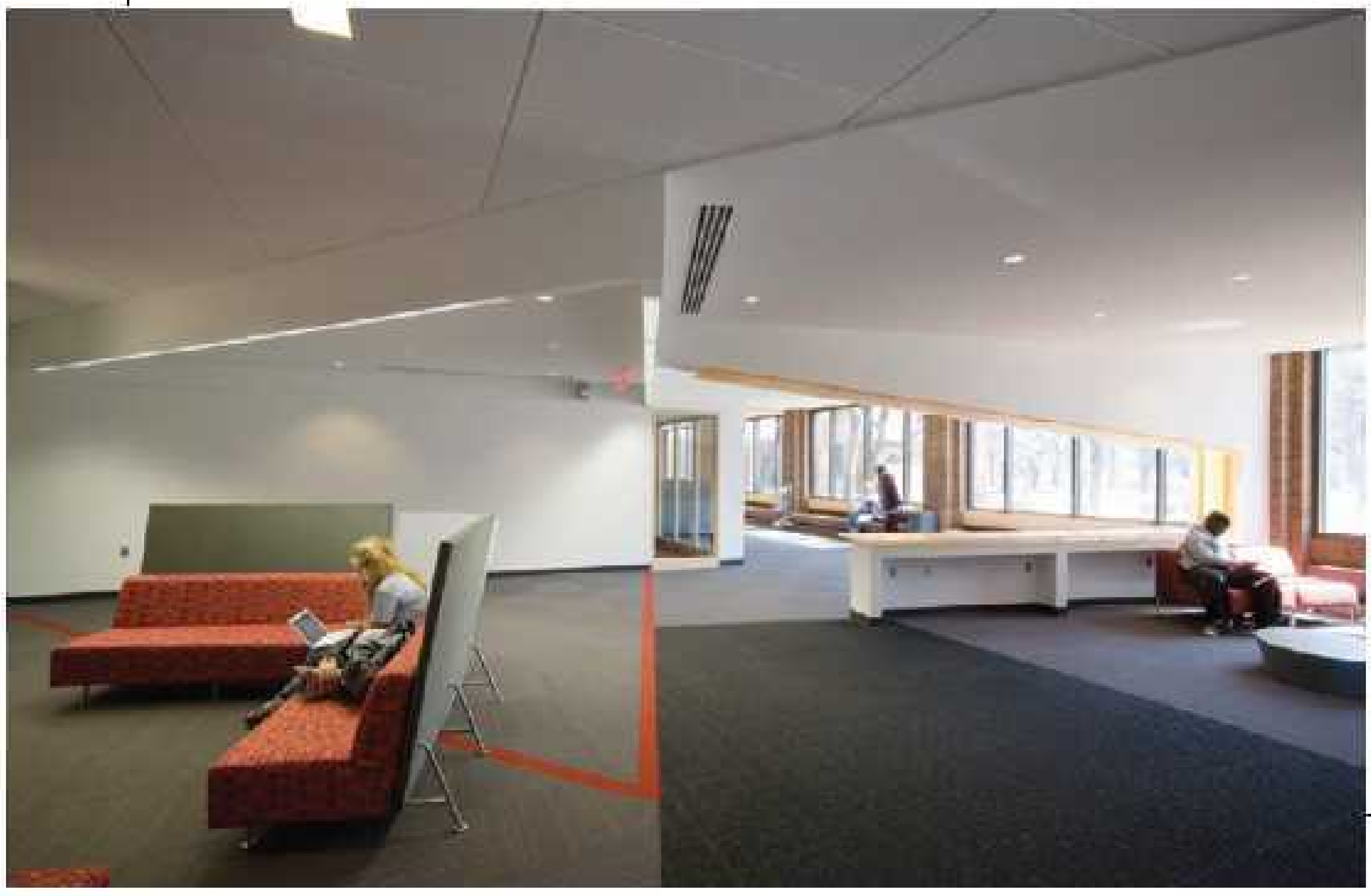
The renovation of French Hall, built in 1977, brings new possibilities for learning and new technological capability to the campus. The 31-classroom renovation enables the university to meet the educational needs of students and graduates by providing an environment both technologically sophisticated and oriented toward interactive, experiential learning.

Renovations also include:

- Necessary mechanical/electrical building infrastructure upgrades.
- ADA-compliance upgrades.
- Redesign of poorly planned corridors to provide effective and safe building flow indicative of a contemporary architectural expression.
- Reconfiguration of faculty offices to eliminate inefficient space and promote interdisciplinary work of faculty and students.
- Improved wayfinding, creating focal points of interest.

Technology in classrooms is addressed through extensive IT infrastructure upgrades. Every classroom is equipped with "smart cart" technology to allow for wireless computers, DVD players, data projectors and document cameras. The technology infrastructure was upgraded to serve the increased network and server needs, and to provide faster connections.

Before



Alliant International University, Student Center Renovation

San Diego, California

Firm: Sillman Wright Architects

Associated firm: Roberts & Bennet, Commercial Interior Designer

Client:
Alliant International University; Geoffrey M. Cox, President

Area of project entry category:
2,369 sq. ft.

Cost of project entry category:
$221,350

Cost/square foot of project entry category:
$93.44

Completion:
November 2007

The project remodeled the existing student center at Alliant International University (AIU). This campus, originally known as United States International University (USIU), was built in the late 1960s. AIU decided the campus buildings were due for upgrades to reflect the 21st-century student's lifestyle.

The AIU student body wanted the remodel to create a modern, open, "great room" with a flexible floor plan for students to relax in between classes. It also provides a meeting place for students and faculty. The students also wanted to be able to grab a snack or browse the Web on wireless laptops.

The design theme reflects a modern cafe using ambient lighting, multiple accent colors and patterned floor finishes. The architect and its team of consultants created a new environment that functions as the student body requested. The new atmosphere attracts more students than ever before. People tend to "hang out" for longer periods of time, with a sevenfold increase in sales compared with preremodel sales.

Before

Grosse Pointe North High School, Science Laboratory and Classroom Addition · *Grosse Pointe Woods, Michigan*

Firm: Ehresman Associates, Inc.

Client:
Grosse Pointe Public School System; Christian A. Fenton, Assistant Superintendent

Area of project entry category:
57,000 sq. ft.

Cost of project entry category:
$9 million

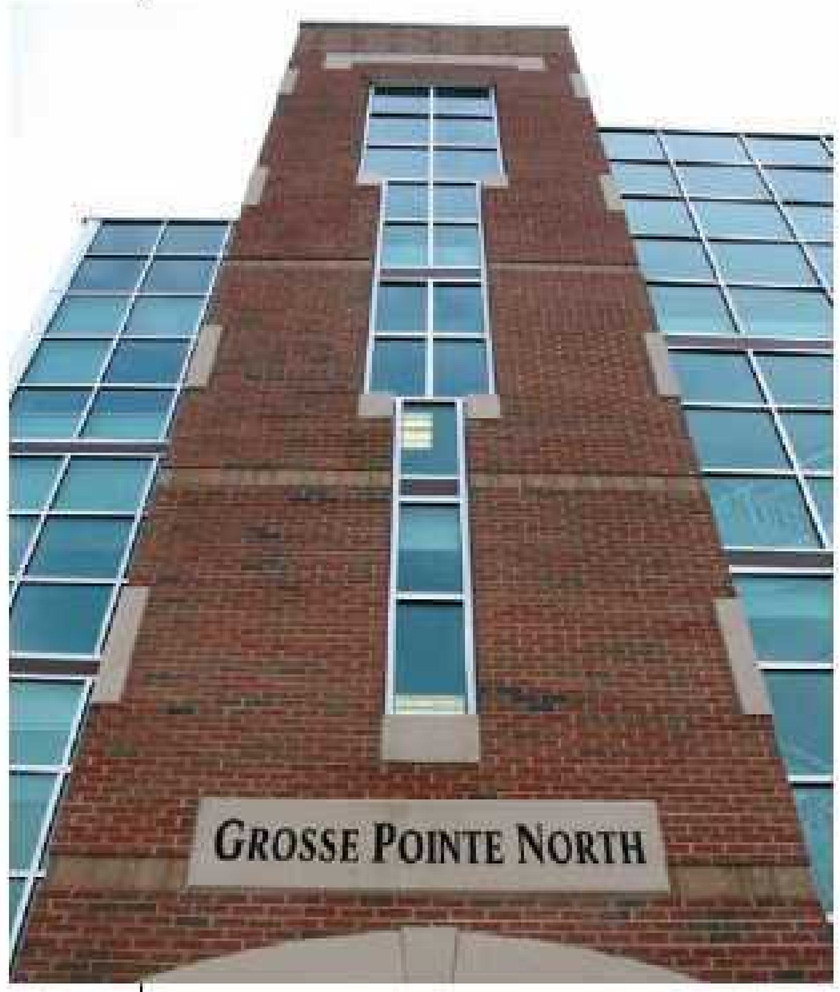
Cost/square foot of project entry category:
$158

Total area:
65,500 sq. ft.

Total cost:
$10,019,770

Total cost/square foot:
$153

Completion:
November 2005



Fourteen state-of-the-art science laboratory classrooms were added in a new four-floor addition to Grosse Pointe North High School in an underused exterior courtyard area. Each lab includes fully equipped workstations for up to 32 students and a separate, adjacent lecture area.

A 5,500-square-foot rehearsal hall and black-box performance theater also were included. Exterior walls are load-bearing masonry and clay brick. Interior walls are decorative concrete masonry unit construction. These materials provide both durability and beauty. The brick was selected to be compatible with the rest of the campus, which was built in 1970.

The campus lacked an identifying focus. This addition aligns with a tree-lined entrance boulevard, which creates a "new face" and identity to this large high school complex. Limestone color and textured cast-stone panels provide attractive accents at the entry tower and above exterior window openings.

A colorful, yet refined, interior design features a patterned, resilient tile floor pattern, green lab countertops, light oak-trimmed laboratory cabinets and brick corridor to blend with the existing architecture.

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Dominican University, Parmer Hall
River Forest, Illinois

When Dominican University recognized that its aging science facility no longer met academic needs, it hired the architect to design Parmer Hall, a state-of-the-art science building that would represent the academic future of the university while remaining true to the Collegiate Gothic architectural style that characterized the rest of the historic campus.

Parmer Hall is Dominican University's largest single building and includes classrooms, laboratories, observation and research rooms, faculty and staff offices, common areas and a lecture hall. Equally important to the university was that Parmer Hall would have the same life expectancy as the original building, be sustainable, and remain within the university's budget.

The architect designed Parmer Hall to support today's more participatory science education, which relies heavily on research and laboratory facilities. Seventeen laboratories were created for the university's biology, chemistry, physics, nutrition and dietetics, and psychology departments. The labs are designed with flexible seating, which enables students to work independently or within a group, fostering active, hands-on learning. Wherever possible, movable furniture was used so that seating arrangements could be adapted easily to several teaching methods. Fume hoods, equipment and computer stations were placed around the rooms' perimeters, maximizing visibility, which promotes instruction and group discussion.

Lighting is direct/indirect to provide even light at the working surface without glare. Exterior walls were kept open to allow natural light through and provide views of the stunning landscape. At night, the building's transparency allows passersby to see the activities going on within the facility.

The nutrition and dietetics laboratory has a demonstration area and a commercial kitchen space. Students use the kitchen to operate a mini restaurant open to the public, and Dominican faculty and staff for lunch once a week. It has become one of the most popular places on campus.

Firm: Holabird & Root

Client:
Dominican University; Amy McCormack, Senior Vice President for Administration

Area of project entry category:
30,000 sq. ft.

Cost of project entry category:
$9 million

Cost/square foot of project entry category:
$300

Total area:
124,000 sq. ft.

Total cost:
$31.8 million

Total cost/square foot:
$256

Completion:
August 2007

Photographer:
Ballogg Photography

"The interior was designed to provide students with an environment that supports our relationship-based mission. Several student common areas near faculty offices encourage students to meet with faculty outside the classroom. A large, two-story atrium provides space for students to gather and study in groups or connect to the Internet."

—Amy McCormack, Senior Vice President for Administration

University of Texas Health Science Center at Houston, Replacement Research Facility · *Houston, Texas*

Firm: WHR Architects

Associated firm: Lake Flato Architects

Client:
University of Texas Health Science Center at Houston Medical School; Nancy McNiel, Executive Director, Administration

Area of project entry category:
200,000 sq. ft.

Cost of project entry category:
$62 million

Cost/square foot of project entry category:
$310

Completion:
December 2007

Photographer:
Joe Aker Photography

The University of Texas Health Science Center at Houston (UTHSC-H) replaced its vivarium, which was flooded by Tropical Storm Allison in 2001, with a new six-story building adjacent to the existing medical school. Limestone-colored precast and tinted glass were chosen to match the existing limestone-clad building. Faculty and students moving between the medical school and new building are greeted by a bamboo garden with zinc connectors.

The Center for Laboratory Animal Medicine and Care is housed on the top two floors. It provides housing for large and small animals, a surgery suite and neurobiology research labs. Modular rooms allow flexible layouts for state-of-the-art equipment and varied usage. The cage wash, a windowless space in most animal-care facilities, is situated on the exterior wall providing naturally lighted views. Maintenance is achieved easily through an interstitial catwalk above the top two floors, which prevents contamination of the vivarium environment.

The 22-foot by 32-foot lab modules provide flexibility in configuration for four specific focus groups: structural biology, neurobiology, molecular biology and functional genomics. Combinations of fixed, movable and mobile furnishings create an ever-evolving lab environment. By using convenient overhead service panels with quick connections, the medical school's reconfiguration options are limited only by its imagination.

The design intent was to provide

researchers as much natural light as possible. The wet labs are situated on the north and south perimeter walls, lined with large windows that allow natural light to brighten the labs and offices. Clerestory windows lining the corridor walls and windows further illuminate interior spaces.

In order to encourage interaction among investigators, each floor has an intimate lobby space with lounge seating. The space is accented with photo displays of enlarged microscopic images created by faculty and graduate students.

Other areas that encourage interaction are the coffee bars on each floor. Lower ceilings and varied lighting accentuate the space. Table and chair seating, as well as marker and tack boards, allow this area to serve as alternative meeting space.

Hazelwood Southeast Middle School
Spanish Lake, Missouri

Firm: Bond Wolfe Architects
Associated firms: PB World and TR,i Architects

Client:
Hazelwood School District; Chris Wright, Superintendent

Area of project entry category:
7,600 sq. ft.

Cost of project entry category:
$988,000

Cost/square foot of project entry category:
$130

Total area:
113,000 sq. ft.

Total cost:
$15 million

Total cost/square foot:
$132.74

Completion:
April 2007

Photographer:
Peter Wilson

The collaboration of three K-12 academic architectural firms helped this growing school district succeed in developing four new middle schools at once. Community-engagement efforts enabled staff, parents and students to help with space programming and develop a master plan to address long-term growth.

The centerpiece of Hazelwood Southeast Middle School is the library and media center, which incorporates the latest advancements in technology. The media center fosters student learning activities and provides a social, interactive area for student gatherings.

The multipurpose gymnasium serves many roles, supporting community sports recreation, physical-education classes, music classes and as a performance venue.

Each middle school is designed to accommodate 900 students and is separated into a three-story classroom wing containing an administrative office on each level, bringing a presence of security and management throughout the facility.

Using a team-building concept, this architects' collaboration made each of these middle schools a success.

Berkshire Elementary School

West Palm Beach, Florida

Firm: Cubellis

Client:
School District of Palm Beach County; Teresa Stoupas, Principal

Area of project entry category:
5,648 sq. ft.

Cost of project entry category:
$1,020,000

Cost/square foot of project entry category:
$180.59

Total area:
148,000 sq. ft.

Total cost:
$23.1 million

Total cost/square foot:
$156

Completion:
April 2007

Photographers:
Chuck Wilkins Photography; Best Shot Productions

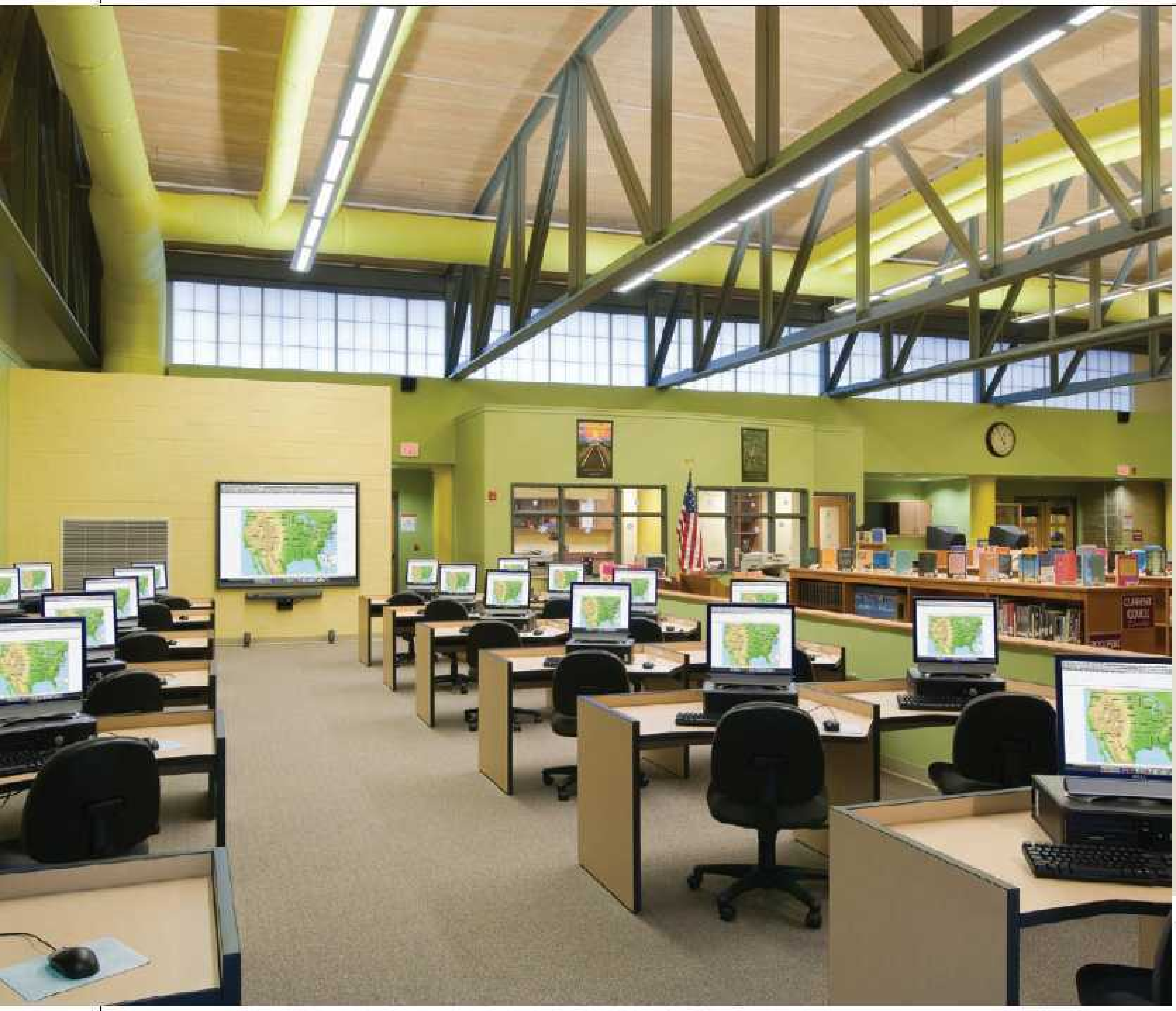
Berkshire Elementary is the largest elementary school in Palm Beach County—on one of the smallest sites. By pushing the 148,000 square feet of educational spaces to the perimeter of the site, the architect created the necessary civic presence along the public face of the building and a centralized administrative presence at the corner of the school.

The library, placed on the floor above the administrative area, offers a bridge to the community during the evening, still keeping the educational spaces secured. The media center is a colorful and vibrant setting that reflects the Hispanic heritage of the student population. Natural light in these voluminous spaces provides an active environment that allows for private reading, computer learning and group activities simultaneously.

The design team documented the rich and expressive murals that adorned the original school buildings, and some of the imagery came to life three-dimensionally in reading areas for children. Walls have been designated for future murals within the media center.

The unique solution embodies the children's needs, while promoting cultural appreciation for students and the community.

John Walker Middle School
Nutley, New Jersey



Firm: DCM Architecture & Engineering LLC

Client:
Nutley Board of Education; Joseph Zarra, Superintendent

Area of project entry category:
5,194 sq. ft.

Cost of project entry category:
$800,000

Cost/square foot of project entry category:
$154

Total area:
136,000 sq. ft.

Total cost:
$21 million

Total cost/square foot:
$154

Completion:
September 2007

Photographers:
Paul Bartholomew;
Pechara Studio (rendering)

This federal-style school building needed upgrades and new space to accommodate its curriculum. The school board commissioned the architect to upgrade all building systems, and add space for a new gymnasium, cafeteria, media center, specialty classrooms, a service area and administrative offices for the board of education.

With a site completely maxed out, the architect was faced with the challenge of carving new space for the media center within the existing building's envelope. The architect divided the original gymnasium horizontally by building a new floor slab 14 feet above the floor level. The basketball court then was transformed into a new cafeteria and central kitchen for the district.

A state-of-the-art media center found its home on the new second floor. The original roof was replaced with a new curved wood deck, exposing the steel structure. The higher section of the roof allows natural, diffused light into the new media center. Lighting controls harvest daylight, and the HVAC infrastructure integrates seamlessly into the architecture.

The College of William and Mary, Wolf Law Library Additions and Alterations at the Marshall-Wythe School of Law

Williamsburg, Virginia

Firm: HSMM AECOM (Hayes, Seay, Mattern & Mattern, Inc.)

Associated firm: RCG, Inc. Architects, Library Programming

Client:
The College of William and Mary; Jim Heller, Director, Law Library and Professor of Law

Area of project entry category:
92,948 sq. ft. (total): 53,157 sq. ft. (renovated), 39,791 sq. ft. (new)

Cost of project entry category:
$10,135,390

Cost/square foot of project entry category:
$109.04

Completion:
July 2007

Photographer:
Chris Cunningham

Musty, dusty, dark and cloistered. America's first law school library no longer was capable of attracting top students. To gain a recruiting edge, college officials knew they needed to create an environment that would mirror the upscale, professional atmosphere of a corporate law firm.

The alterations and additions were designed with three key elements in mind: respect the building envelope and surrounding campus, advance the existing architectural aesthetic, and integrate tradition harmoniously with technology.

Site constraints required innovative approaches—from phasing construction so the library could remain operational, to capturing natural light through skylights and walls of windows that offer serene views of an adjacent wooded ravine.

Providing almost twice the previous space, this new facility has an open setting that encourages collaboration, and allows rare books and wireless Internet to be accessed under the same roof.

Fulfilling its purpose of respecting the traditional institutions of the law while recognizing the values and expectations of today's student body, Wolf Law Library now serves as a beacon, luring the best and brightest legal minds to this prestigious school.

Larry G. Smith Elementary School
Mesquite, Texas

Firm: KAI Texas

Client:
Dallas Independent School District; Lora D. Morris, Principal

Area of project entry category:
3,765 sq. ft.

Cost of project entry category:
$463,577

Cost/square foot of project entry category:
$123.13

Total area:
91,562 sq. ft.

Total cost:
$11,273,852

Total cost/square foot:
$123.13

Completion:
April 2007

Photographer:
Michael Lyon

Dallas Independent School District (DISD) wanted an elementary school that stimulated and encouraged exploration and investigative thinking among students and teachers. DISD recognized that students learn best in "safe" environments among other children close to their age group.

Larry G. Smith Elementary School accommodates 809 students in grades pre-K to 5. The 91,562-square-foot, two-story structure is situated on about 13 acres in the city of Mesquite, just beyond the southeast border of Dallas.

The facility's two-story entrance lobby and media center form the hub from which the academic wings extend. Extensive use of glass on both the exterior and interior enlivens these spaces and allows connections to and through the space. Within the media center, the overhanging computer room creates a defined reading nook in the media center below. Other zones for study and multimedia activities were created with shelving units.

Although bright colors were used in the entrance lobby and public corridors, more subtle tones were employed in the media center to reflect the quieter activities in that space.

Roberts Wesleyan College, Golisano Library
Rochester, New York

Firm: Leo A Daly
Associated firm: SWBR Architects

Client:
Roberts Wesleyan College; John Martin, President

Area of project entry category:
43,000 sq. ft.

Cost of project entry category:
$8.7 million

Cost/square foot of project entry category:
$203

Completion:
August 2007

Photographers:
Tim Wilkes Photography; Leo A Daly

Situated on a highly visible and prominent corner of the campus, Golisano Library offers an icon of higher learning to Roberts Wesleyan College.

Golisano Library was designed with four major objectives in mind:

1. Provide increased space for reader collection.
2. Provide invigorating and collaborative study environments.
3. Complement and elevate the architectural language of the campus.
4. Illustrate the educational value of a sustainably designed facility.

An inviting entrance and plaza engage the heart of the campus, strengthening the relationship between designed interior and exterior spaces. Once inside, the learning commons allows for interactive opportunities among students, staff and the community. This "architecture of interaction" encourages increased use, both during the day and at night. The coffee shop, fireplaces and reading lounges make this dynamic study space all the more attractive.

The facility features daylight, geothermal heat pumps and natural resources. Sustainable-design techniques and materials were considered throughout the entire design process and ultimately will contribute to a LEED-NC silver certification.

The presence of the new Golisano Library is one of substance, permanence and respect.

Lincoln Public Library, Twelve Bridges Learning Center
Lincoln, California

Firm: NTD Architecture

Client:
City of Lincoln, Sierra Community College District and Western Placer Unified School District; Darla Wegner, Director of Library Services

Area of project entry category:
39,311 sq. ft.

Cost of project entry category:
$11,135,751

Cost/square foot of project entry category:
$283.27

Completion:
October 2007

Photographer:
Whittaker Photography

The Sierra Community College/Lincoln High School Learning Center is a joint-venture project among Sierra Community College, the Western Placer Unified School District and the city of Lincoln. The 39,311-square-foot facility includes designated areas for adults, young adults, children and periodicals, as well as a computer lab, a homework center, media and reference areas, group-study areas and a community room.

The interior design features a mixture of cherry woods; warm, neutral tones; and gray accented by rust and ultramarine. The main entry is a rotunda design with a custom kiosk that can serve as a directory or a display. An abundance of natural light spills down into the high-volume main library through clerestory windows above.

When entering the children's library, visitors first pass through a stylized upside-down book/arch that displays storybook murals. A twisted pathway defined in the carpeting leads down a winding path through the book stacks and to the main storytelling area. This twisted pathway is mimicked in the ceiling with LED and cove lighting.

Tecumseh High School
New Carlisle, Ohio

Firm: SHP Leading Design

Client:
Tecumseh Local School District; Jim Gay, Superintendent

Area of project entry category:
7,896 sq. ft.

Cost of project entry category:
$1,097,859.84

Cost/square foot of project entry category:
$139.04

Total area:
172,613 sq. ft.

Total cost:
$24 million

Total cost/square foot:
$139.04

Completion:
August 2007

Photographer:
Ken Schory

The design of Tecumseh High School married the old with the new seamlessly. Balancing community values with state requirements, the district elected to keep the existing gym and auditorium, and construct the new facility around them. However, community-engagement efforts revealed that the community desired a traditional red-brick building rather than the existing yellow brick. To blend the two, the brick on the old portion was stained to match the red brick of the new building.

The main feature of the new hourglass-shaped building is a large, daylighted media center. The pie-shaped media center is tucked into the center of the school's academic wings and serves as a focal point. The two-story space features a wood-beamed ceiling and warm colors to welcome students to the space. To provide additional daylight, an open second-floor bridge features floor-to-ceiling windows and connects the two academic wings.

The overall design of the space serves as the literal and figurative heart of the building. A large computer lab and conference room are adjacent to the space. In addition, the media center opens to the courtyard to provide outdoor classroom space.

J. Lyndal Hughes Elementary School
Justin, Texas

Firm: SHW Group LLP

Client:
Northwest Independent School District; Karen Rue, Superintendent

Area of project entry category:
11,500 sq. ft.

Cost of project entry category:
$1,437,500

Cost/square foot of project entry category:
$125

Total area:
79,040 sq. ft.

Total cost:
$9,444,651

Total cost/square foot:
$119.50

Completion:
August 2005

Photographer:
Mark Trew

Great learning environments optimize flexibility through creative use of reconfigurable space, furniture, outdoor areas and technology to accommodate students, staff and the community now and in the future. J. Lyndal Hughes Elementary School is designed to house 650 students in grades K to 5. One of the school's standout features is the garage door-like overhead panels that separate classroom spaces from the flex spaces that connect two classrooms. The flex spaces also facilitate science/art wet task instruction. When the doors are pulled down, frosted windows minimize distractions between spaces.

Another unique feature is the innovative cafeteria space that opens up to become a performance stage so that the room can double as an auditorium. Designers used curtain and folding panel partitions to convert the dining room into varying sizes of stage arrangements. The stage opens up to and steps down to the gymnasium, which acts like the house of an auditorium.

Natural light is predominant throughout the school—in the corridors, classrooms, offices and assembly/public spaces—offering an open, welcoming and secure environment as a neighborhood school and community multipurpose facility.

Florida Gulf Coast University, Athletic Building

Fort Myers, Florida

Firm: Architecture, Inc.

Associated firm: Erickson Associates

Client:
Florida Gulf Coast University; Wilson Bradshaw, President

Total area:
19,920 sq. ft.

Total cost:
$3,830,000

Total cost/square foot:
$192

Completion:
January 2008

Photographer:
Donald Solins II

This new athletic facility, set among the athletic fields at Florida Gulf Coast University, provides multiple services to the athletic department, student athletes and the university as a whole. The program's scope includes locker rooms, offices and a concession area on the ground floor. The second floor has offices, a student-resources lab and a multipurpose room overlooking the university's baseball field. The multipurpose room makes use of floor-to-ceiling butt glazing to provide an unobstructed view of the athletic complex.

The building's orientation, exterior concrete panels and fenestration directly reflect the varying characteristics of the interior functions. Using tilt-wall construction with interior steel framing provided an economic solution for the structure while allowing for creative solutions to interior space planning. The exterior materials are as much a part of the aesthetic as they are a solution to the unique requirements presented by the building's adjacent uses. Site planning and design address the long-term vision and preparation inherent to institutional design and master planning.

Belvidere North High School
Belvidere, Illinois

Firm: ATS&R Planners/ Architects/Engineers

Client:
Belvidere Community Unit School District 100; Donald Schlomann, Superintendent

Total area:
318,000 sq. ft.

Total cost:
$44.2 million

Total cost/square foot:
$139

Completion:
July 2007

Photographer:
Mike Crews

This new high school was designed for an evolving, rural-based community experiencing rapid growth and needing flexibility to support changing education programs.

The building contains four classroom houses, each with teacher work areas, restrooms and student lockers that are situated centrally around a media center and various specialized labs. Flexible learning areas, administration and classrooms are carpeted for better acoustics, low maintenance and visual warmth.

Bright school colors were used in athletic areas, which include a four-station gymnasium with wood flooring on the main court, a synthetic running track, wrestling room and weight/fitness room.

To encourage community use while providing student safety, the facility has various distinct, secure, separate entries for school activities and community use.

Warm paint tones with classic accents and cherry woodwork add softness and warmth throughout the building. Timeless, durable and low-maintenance flooring was used in high-traffic areas. Color accents were used for wayfinding and visual interest throughout the circulation.

Energy performance was a priority in the design through the use of high-quality roof insulation, insulated high-performance glass windows, and a computer-controlled heating and cooling system.

Savannah Christian Preparatory School, Eckburg Center
Savannah, Georgia

Firm: Cogdell & Mendrala Architects, PC

Client:
Savannah Christian Preparatory School; Roger L. Yancey, Headmaster

Area of project entry category:
56,428 sq. ft.

Cost of project entry category:
$8,775,000

Cost/square foot of project entry category:
$155.50

Completion:
November 2007

Photographer:
Richard Leo Johnson

Savannah Christian Preparatory School's Eckburg Center (athletic/fine-arts facility) is a 58,000-square-foot multiuse building on its West Campus in Savannah, Ga. The 1,600-seat athletic arena is equipped with all the necessary support functions that enable the school to host state-level basketball and volleyball tournaments. When floor seating is added, the seating capacity increases to about 2,000 and functions as a performance venue. The in-house, state-of-the-art audiovisual system consists of stage lighting, spot and camera platforms, and a sound/lighting control booth. The building design allowed for a modified fly tower to facilitate stage productions in a more economical format. The lobby incorporates a concessions area, box office and display cases for trophies.

Supporting the athletic functions are physical-education and team locker rooms, a fully equipped weight-training room, an aerobics/dance studio and a separate football training/locker room.

Along with band and chorus suites, the facility houses the art department for the Upper School.

Winthrop University, The Lois Rhame West Health, Physical Education & Wellness Center · *Rock Hill, South Carolina*

Firm: The FWA Group, Architects

Client:
Winthrop University; Anthony DiGiorgio, President

Area of project entry category:
137,000 sq. ft.

Cost of project entry category:
$21.3 million

Cost/square foot of project entry category:
$155.47

Completion:
August 2007

Photographer:
Peter Brentlinger

The West Center includes a blend of spaces for those in health, physical-education, sports-management and recreational career paths, and provides general recreation and wellness spaces for the campus community. It seems fitting that a building designed to maximize physical well-being also would contribute to the well-being of the environment.

The West Center replaces the old 1915 Peabody Gymnasium on Winthrop's campus. The old gymnasium's large arched windows were the design inspiration for the West Center's architectural style. Wood flooring and original seating were salvaged and reinstalled in the lobby of the new building.

The West Center is designed to achieve LEED certification. The basic orientation of the building, in addition to integration of daylighting and lighting controls, was a major factor in achieving this level of efficiency. A unique daylighting feature can be found in the classrooms, which are in the interior of the building and without windows. These classrooms are daylighted at each end of the space through rooftop dormers. The result is a uniformly daylighted space.

University of Tulsa, Case Athletic Complex
Tulsa, Oklahoma

Firm: Hastings & Chivetta Architects, Inc.

Client:
University of Tulsa; Robert Shipley, Associate Vice President of Operations and Physical Plant

Area of project entry category:
29,175 sq. ft.

Cost of project entry category:
$7,810,000

Cost/square foot of project entry category:
$267.69

Completion:
September 2007

Photographer:
Sam Fentress/Fentress Photography

The 29,175-square-foot Case Athletic Complex is situated at the north end zone of the historic Skelly Field. The exterior complements the University of Tulsa's Collegiate Gothic building style of ashlar stone and slate tile roofs. A large brick plaza welcomes visitors into the atrium, which has a ticket booth, souvenir shop and restrooms.

The three-level complex features walls of honor that pay tribute to the coaches and players who built TU's football heritage. Retired jerseys are featured in the locker room.

A 4,000-square-foot meeting space has eight break-out rooms, each equipped with independent audiovisual technology and an adjacent catering kitchen.

The Academic Achievement Center, for students from all sports, has 18 computer stations, tutoring and counseling offices, and 1,500 square feet of flexible space for either individual work or group projects.

The coaches' administrative suite has private offices, a conference room, workrooms, media room, a coaches' locker room, storage, and an editing and production center. Many offices have floor-to-ceiling windows looking out onto the football field.

Next to the administrative suite is the 1,000-square-foot Lettermen's Lounge for alumni programs and activities.

The locker room has high-definition TVs throughout. The adjacent athletic training room features a 3,300-gallon hydrotherapy pool and 750-gallon cold-plunge tank.

East Hickman High School
Bon Aqua, Tennessee

Firm: Kaatz, Binkley, Jones & Morris Architects, Inc.

Client:
Hickman County Board of Education; Jerry Nash, Director of Schools

Area of project entry category:
35,000 sq. ft.

Cost of project entry category:
$4,093,487

Cost/square foot of project entry category:
$116.96

Total area:
213,800 sq. ft.

Total cost:
$22.3 million

Total cost/square foot:
$104.30

Completion:
August 2007

Photographer:
Aerial Innovation of TN, Inc.

The design solution for this project involved working with the natural topography to maximize site efficiency and minimize environmental impact. The result is a split-level facility with classrooms and administration on one level, and assembly spaces on another level with separate entrances and parking. The gymnasium was designed to seat 2,300 spectators with a suspended running track above that connects the mezzanine to the upper level of the school. Six basketball goals and a vertical divider curtain allow for multiple classes to use the gymnasium simultaneously. The school colors, silver and blue, are seen in the motorized bleachers and painted accent stripes.

Locker rooms for physical-education classes and varsity sports are situated off the gymnasium floor, along with the weightroom and restrooms. Clerestory windows with translucent panels allow plenty of natural light with no glare. The ductwork is fabric and runs just below the exposed structure, which is painted white to brighten the entire space. Offices for the athletic department are on the mezzanine level, and overlook the running track and gymnasium.

Cathedral High School, New Science Building and Gymnasium
Los Angeles, California

Firm: Kluger Architects, Inc.

Client:
Cathedral High School; Martin Farfane, President

Area of project entry category:
48,040 sq. ft.

Cost of project entry category:
$13.5 million

Cost/square foot of project entry category:
$281

Completion:
November 2007

Construction for the Cathedral High School gymnasium and science building in Los Angeles was completed in November 2007. The architect was asked to embellish on the school's existing traditional Italian Baroque architectural style not only to maintain, but also to enhance the school's traditional character.

This landmark project symbolizes a new era of progression for the school. The new gymnasium and science building consists of two stories of high-tech classrooms; a full gymnasium; a subterrain floor that houses home and visitor locker rooms; and a fully equipped athletic facility. The second floor boasts an alumni room where meals can be served and an observation balcony overlooking the skyline of downtown Los Angeles.

Taking into account the school's history in the design, the architect wanted its work to bring a "sense of permanency" to the campus and ultimately to emphasize its family-oriented tradition.

King's College, Scandlon Gym Wellness Center

Wilkes-Barre, Pennsylvania

Firm: Robert A. Lack AIA Architecture & Design Inc.

Client:
King's College; Rev. Thomas J. O'Hara, President

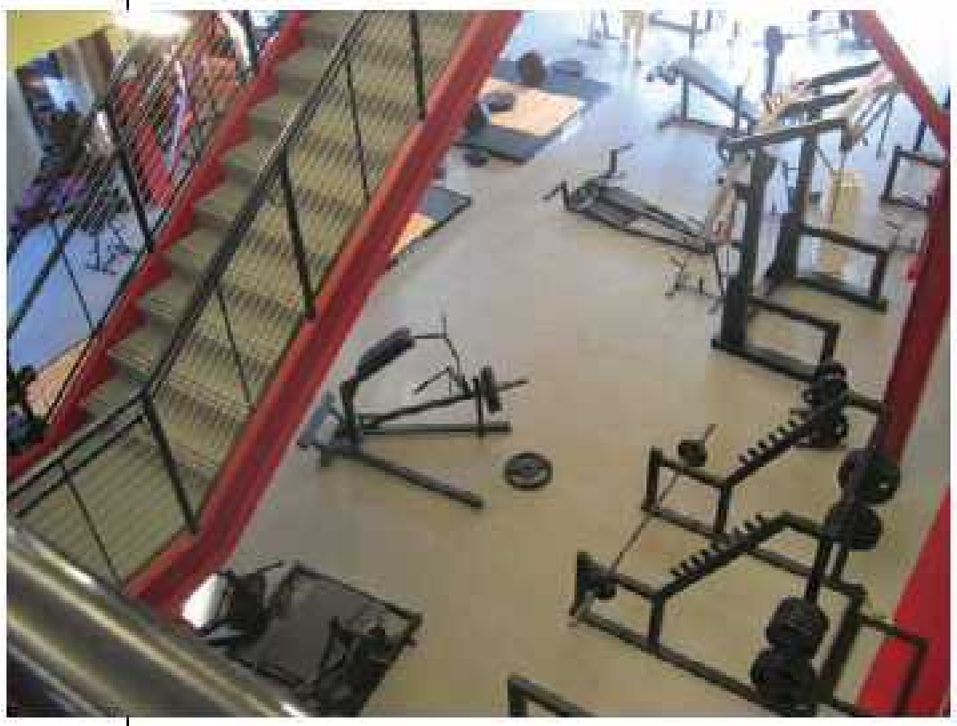
Area of project entry category:
9,500 sq. ft.

Cost of project entry category:
$1.5 million

Cost/square foot of project entry category:
$158

Completion:
November 2007

Photographer:
Susan McGarry



The Scandlon Gym Wellness Center was designed to provide both a strength-training facility and cardiovascular facility for the athletics department and student body of King's College. This 9,500-square-foot addition is situated on an existing exterior space that was rarely used.

The wellness center met the requirements of the college by providing a space adjacent to the existing athletic facilities on campus, incorporating daylighting into the space, and serving as a recruitment facility for the athletic department and general campus. This space is adjacent to the existing coaches' offices, and uses the locker rooms and facilities of the existing building.

The design of the space maximizes the usable area on two levels under the existing roof, which was 28 feet above grade. The space was designed with a 14-foot-clear first floor and 12-foot-clear second floor with exposed beaming and ducts on the first floor for an industrial atmosphere. The steel was painted a bright "monarch" red, one of the two school colors. Gold and monarch red color elements were used subtly throughout the new space to identify it within the college's athletics department.

The second floor is a finished space for open cardio machines, and an aerobics room for small-group instruction, cheerleading and dance practices.

OUTSTANDING DESIGNS

PHYSICAL-EDUCATION FACILITIES/RECREATION CENTERS

Providence College, Concannon Fitness Center

Providence, Rhode Island

Firm: Symmes Maini & McKee Associates

Client:

Providence College; Mark Rapoza, Associate Vice President of Capital Projects and Facilities Planning

Area of project entry category:

29,087 sq. ft.

Cost of project entry category:

$10,425,000

Cost/square foot of project entry category:

$358

Completion:

August 2007

Photographer:

Edward Jacoby

Providence College's new Concannon Fitness Center is a major destination on campus for visitors, varsity and recreational student athletes, faculty and staff. In addition, it creates a new light-filled atrium entrance to three buildings: Petersen Field House and Natatorium; Alumni Hall varsity sports arena and gymnasium; and Slavin Hall student activities center.

The fitness center provides aerobic and cardiovascular exercise equipment, free weights, common areas for socializing and related support spaces for the entire campus community. From within the building, there are views of the 25-meter competition pool in Petersen and an adjacent artificial-turf field. Spectator seating in Alumni Hall is served by a new public entrance in the atrium, and includes a ticket office and access to new visiting team locker rooms.

Westminster College of Salt Lake City, Dolores Doré Eccles Health, Wellness and Athletic Center · *Salt Lake City, Utah*

Firm: VCBO Architecture

Client:
Westminster College of Salt Lake City; Michael Bassis, President

Area of project entry category:
63,000 sq. ft.

Cost of project entry category:
$7,875,000

Cost/square foot of project entry category:
$125

Total area:
84,000 sq. ft.

Total cost:
$11 million

Total cost/square foot:
$131

Completion:
September 2005

Photographer:
Paul Richer/Richer Images

The design challenge for the Westminster College Dolores Doré Eccles Health, Wellness and Athletic Center was to create a contextually appropriate building within its historically significant, but very progressive, campus that will serve as an activity magnet for students and staff. The program, which encompasses all aspects of health and wellness on the campus, includes a student recreation facility with athletic courts, a lap pool, weight-training area, aerobics studio, cardio-training areas, a climbing wall, running track, and locker rooms for athletic teams and students.

The mantra for the organization of the activity spaces was to avoid visible separations. To create the activity magnet that the college desired, movement needed to be sensed and felt from everywhere. The building also serves as a gathering place that attracts students who wish to exercise socially, as well as physically.

The Health, Wellness and Athletic Center assimilates into Westminster's historic lineage while expressing a commitment to the future. Using functional adaptations of historically derived architectural elements that capture and modulate daylight from the south helps integrate the building into its historic campus context.

Franklin & Marshall College, Campus Crossings-College Row

Lancaster, Pennsylvania

College Row at Franklin & Marshall provides a luxurious and comfortable home away from home where students live and study in Lancaster, Pa.

The complex introduced a new Main Street area to Franklin & Marshall, and successfully connects the campus to downtown Lancaster. With 117 units and 50,000 square feet of retail space, the building has transformed the college's North Campus into a vibrant, mixed-use community where students, faculty, staff and others from the region live, shop and dine.

To preserve "Old Lancaster" and blend in with the existing campus and surrounding community, the complex was designed to resemble a historical piazza. The residential units offer luxury amenities and the latest communication technologies to provide security and convenience for the modern student's lifestyle.

A "college-approved" residence, College Row is not only a sought-after housing option for students, but also a solution that helps the school fulfill its residency goals. With a friendly atmosphere and extensive commercial opportunities, the complex has become the cornerstone of Franklin & Marshall's growth and development for the coming years.

Firm: Campus Apartments Inc.

Associated firm: Elkus Manfredi, Architect

Client:
Franklin & Marshall; John Fry, President

Area of project entry category:
169,222 sq. ft.

Cost of project entry category:
$23 million

Cost/square foot of project entry category:
$135.92

Total area:
218,582 sq. ft.

Total cost:
$28 million

Total cost/square foot:
$128.10

Completion:
August 2007

Photographer:
Tom Bradley

University of North Carolina Wilmington, Seahawk Village and Seahawk Landing Student Housing Complexes

Wilmington, North Carolina

Firm: Clark Nexsen Architecture & Engineering

Client:
University of North Carolina Wilmington; Patricia L. Leonard, Vice Chancellor for Student Affairs

Total area:
472,000 sq. ft.

Total cost:
$57,602,000

Total cost/square foot:
$122.04

Completion:
June 2007

Photographers:
Peter Aranyi; Marc Lamkin Photography; John Wadsworth Photography

In developing Seahawk Village and Seahawk Landing residence complexes, the University of North Carolina Wilmington (UNCW) sought to create a space in which upperclassmen want to live, learn and grow—and keep underclassmen on campus. This was achieved by providing apartment-style living with full amenities on campus.

Seahawk Village houses 524 students in apartments with double beds, full kitchens, washers and dryers, and all amenities. This community includes six apartment buildings, a community activity center and a swimming pool. Seahawk Village was so successful that the residence complex sold out in a four-hour period to an overnight, standing-in-line student population. The overflow of more than 400 students from that event soon assisted in populating Seahawk Landing.

Seahawk Landing houses 609 students in seven buildings and includes a fitness center, convenience store and coffee shop. Students enjoy features such as private bedrooms and full-appliance packages. The complex also includes a pool with bath house and sunbathing area.

The extraordinary success and popularity of these upperclassmen-only residence complexes has led to Phase III housing, which now is under construction. When Phase III is finished, UNCW will have completed a $116 million housing venture that has added 1,795 beds to its campus.

From the beginning, the concept was to create a residential quadrant on campus; these projects have succeeded in making that concept a reality.

University of Rhode Island, Zeta Beta Tau Fraternity House

Kingston, Rhode Island

Firm: Lerner | Ladds + Bartels, Inc.

Client:
Zeta Beta Tau Fraternity;
Domenic Passarella, President

Area of project entry category:
9,000 sq. ft.

Cost of project entry category:
$1.6 million

Cost/square foot of project entry category:
$186

Completion:
October 2005

Photographer:
Warren Jagger Photography

ZBT fraternity teamed with the architect to design a new home on the University of Rhode Island campus to take the place of an existing structure that was lost to a fire and only partially rebuilt a decade before.

Because the program was ambitious in relation to the size of the site and budget, an efficient and economical design was vital. Each room was planned and sized not only to accommodate the required program, but also to mitigate waste of materials. Standard-length lumber was used whenever possible to reduce the amount of waste and labor needed to erect the walls.

The exterior of the building was designed to be contextual with the surrounding neighborhood. The architect drew from the language of traditional New England residential architecture, materials and detailing to create a facade with a sense of home. Traditional gable end roofs, used at the entrance to the residential side of the fraternity house, brought the facade to a human scale.

Keene State College, Pondside III Residence Hall
Keene, New Hampshire

Firm: Lavallee Brensinger Architects, Project Architect

Associated firm: Herbert S. Newman & Partners, Design Architect

Client:
Keene State College; Jay Kahn, Vice President for Finance & Planning

Area of project entry category:
51,300 sq. ft.

Cost of project entry category:
$13.9 million

Cost/square foot of project entry category:
$271

Completion:
August 2007

Photographers:
Joseph St. Pierre Photography; Dave Lamb Photography

Pondside III is a new suite-style residence hall with 51,300 square feet and 154 beds that sets a new standard for residence life at the college. Each suite has singles, doubles or a mix of both.

Awarded a LEED silver, the facility has sustainable interior surfaces and furniture. Students can see and feel the materials used in the building. A composite product uses recycled soda-can shavings for countertops and window sills. All flooring materials include recycled content.

A community of common spaces on the main floor offers zones for dining, socializing and collaborating.

Kitchen and dining areas, lounges with televisions, meeting spaces and small reading areas promote interaction. Spaces are defined clearly with distinctive colors and materials. Ground-floor spaces are easily accessible upon entering or exiting the building, drawing students into the "social hub" of the hall.

Natural light comes from glass walls, allowing spaces to be viewed from within the building and from outside, further encouraging students to socialize and work together.

Strategic placement of interior apertures provides fewer blind spots and enhanced security.

Suites with small kitchen areas and spacious bedrooms give students private space. Natural materials and colors give the suites a homelike atmosphere.

Situated in a rural setting, natural materials and colors complement and mirror the building's environmental context. They also emphasize the residential feeling of the structure.

Furniture was selected to maximize the flexibility of first-floor functions.

Slate flooring in the main entry, first floor and stair is a continuation of the outdoors and identifies public/common spaces in the building.

The use of wood panels for walls, handrails and benches complements the use of stone and glass, adding richness and warmth to the space.

"Pondside III fosters a sense of community through social and study spaces provided at the suite, floor and ground levels. The hall helps promote living/learning-themed suites with shared interests such as nutrition, campus ecology, film studies, music education and upper-class honors."

—Jay Kahn, Vice President for Finance and Planning, Keene State College

University of Florida, Delta Delta Delta
Gainesville, Florida

Firm: Treanor Architects, PA

Client:	Delta Delta Delta; Cari Cook, Executive Director
Total area:	23,585 sq. ft.
Total cost:	$5.5 million
Total cost/square foot:	$233
Completion:	August 2007
Photographer:	Steve Swalwell/Architectural Foto Graphics

The architects began working with Delta Delta Delta at the University of Florida in 2003, facilitating discussion of whether to renovate the chapter's existing house or build a new structure. Rigorous examination of financial and programmatic needs, as well as chapter and university tradition, revealed that it would be in the organization's best interest to build a new house at its existing location.

The Neoclassical, plantation-style home incorporates the organization's goals, including current and future market viability. The design balances educational and non-educational space; private, semi-private and public space; and high-finish presentation and utilitarian areas.

The design makes use of cutting-edge innovations in technology with respect to security and energy management. It is the first Greek facility in the nation to use a fingerprint-reader access-control system, alleviating the issue of lost keys and cards. A remote direct-digital-control system helps manage the temperature, humidity and unit performance via the Internet from anywhere in the world.

State University of New York College at Cortland, Shea Hall Renovations · *Cortland, New York*

Firm: Woolley Morris Architects, PC

Client:
Dormitory Authority State of New York/SUNY Cortland; Nasrin Parvizi, AIA, Associate Vice President

Area of project entry category:
39,000 sq. ft.

Cost of project entry category:
$3,750,000

Cost/square foot of project entry category:
$95.15

Completion:
August 2007

Photographer:
Don Cochran

Shea Hall is a vintage residence hall constructed of brick and stone masonry with a concrete structure typical of its time. A few of the challenges for a modern renovation include low floor-to-floor heights, small toilet rooms, and finishes now considered to be "institutional."

The architect created a more open and contemporary interior, modernizing common spaces such as lounges, shared toilet rooms and study areas. In addition, the grade change of one-half of a story had to be accommodated in the lobby from one side of the building to the other to enable controlled access.

The design strategy was to close off the partial stair running down to the lower floor and to open up the common areas by removing a significant section of the floor. This allowed more natural light into the lower level, created a two-story space in a particularly cramped area at the entries, and connected lounge spaces at both levels.

In addition, a skewed geometry was introduced in the walls and ceilings in the main common areas to articulate it as something unique from the building.

The toilet rooms have a tapered design with small glass partitions to allow natural light into the shower stalls.

Glendale Community College, Student Union Remodel

Glendale, Arizona

Firm: Architectural Resource Team, Inc.

Client:
Maricopa County Community College District; Charles Jeffery, Dean

Total area:
28,757 sq. ft.

Total cost:
$4,480,050

Total cost/square foot:
$156

Completion:
March 2007

Photographer:
Ed Taube

Prior to the remodel, the 50-year-old student union was dark, technologically under-equipped, and not highly visible from the rest of the campus. As a result, the No. 1 goal of this project was to provide a student union that would be used heavily by students.

The end result was highly successful with a focus on transparency—both from inside by removing walls, and from the inside-out and outside-in by the addition of walls of windows. The use of varying floor finishes, wall color, floating ceilings and lighting techniques provides visual definition without the use of divider walls. New elements added were a permanent coffee bar; a cyber cafe; a lounge full of modular, movable furniture; flatscreen TVs; and large whiteboards for use by individual study groups. Office areas were reconfigured for the college staff and student government. Large meeting rooms that are a revenue source for the college received new finishes.

The building's distinctive architecture was maintained and elements were repeated using lighter, more contemporary materials.

Vanderbilt University, Commons Center
Nashville, Tennessee

Firm: Bruner/Cott & Associates

Client:
Vanderbilt University; Judson Newbern, Associate Vice Chancellor

Area of project entry category:
115,000 sq. ft.

Cost of project entry category:
$25 million

Cost/square foot of project entry category:
$217.39

Completion:
August 2007

Photographer:
Richard Mandelkorn

The new LEED gold-certified Commons Center at Vanderbilt University is a vital component of its ambitious building program to expand student housing and campus services, and transform the undergraduate student experience to that of a residential college.

The Commons Center's proximity to a National Register collection of Classical Revival 1920s buildings arranged along a very formal UVA-type lawn inspired the building's design. After collaborating with the design architect, the university decided that materials needed to match the existing brick and stone of the surrounding structures, but that the building forms and composition of the Commons Center could take liberties to convey a more contemporary feel.

The main dining hall of the Commons Center, the Eatery, is a 550-seat, two-story space. The first floor is the larger space—with two working EcoSmart flue-less fireplaces and floor-to-ceiling windows offering views of the dining patio and the campus beyond. The upper level is accessed through both the first-floor dining room and the building's main atrium stairs.

The 6,000-square-foot servery and production space features five gallery platforms, based on a Euro-kitchen design: Chef's Table; Brick Oven; Grill; Wok; and Salad Bar, Soup & Sizzle Station. This approach allows for flexibility in food concepts and menus.

A 24/7 mini-market/cafe, Common Grounds, is on the first floor and opens to the main reception area and seating with a series of computer stations. The first floor also has a large, open social space on the south facade that looks out onto the new quadrangle. A separate, more intimate lounge is in the southwest corner of the first floor and offers a cozy atmosphere for gatherings and study groups.

The second floor of the Commons Center is home to a fitness center and post office—both designed to be satellite units of the main campus resources, yet still accommodate the needs of this developing area of campus. There are also administrative offices, meeting rooms, resource groups for academic assistance, a lounge, and access to the upper level of the main dining room.

Northwestern College, Rowenhorst Student Center

Orange City, Iowa

Firm: Cannon Moss Brygger & Associates

Client:
Northwestern College; Greg Christy, President

Area of project entry category:
40,166 sq. ft.

Cost of project entry category:
$4,984,628

Cost/square foot of project entry category:
$124.10

Completion:
September 2007

Photographer:
Paul Brokering

Northwestern College's Rowenhorst Student Center began its life as a factory and was converted to a student center in the late '70s. It had unique, high-quality materials and was used frequently.

In the 21st century, video games have more appeal than pool tables, and plasma screens and personal computers have replaced big-screen TVs in student centers. Consequently, the building became highly underused. The low ceilings, circuitous paths and dark colors added little to a largely vacant and lifeless building. Even the facade was so anonymous that most people drove by not knowing the building existed.

The design solution creates a vibrant, colorful facade with a clear entry statement. It was designed to include materials and colors common to some of the college's other buildings.

Inside, all 44,000 square feet were reconstructed. A simple, straight, clerestory-lighted spine was cut through the roof and the core of the building. All spaces inside were reorganized, and new functions were integrated to generate more student traffic.

The building has become the antithesis of its former self. Once low, dark, circuitous and lifeless, it now is voluminous, and filled with light and student activity.

Wright State University, Student Union/Recreation Center Renovation · *Dayton, Ohio*

Firm: The Collaborative Inc.

Client:
Wright State University; Eric Corbitt, Director

Area of project entry category:
165,000 sq. ft.

Cost of project entry category:
$8.4 million

Cost/square foot of project entry category:
$50.90

Completion:
September 2007

Photographers:
The Collaborative Inc.; Howard E. Doughty

The Student Union/Recreation Center at Wright State University (WSU) has emerged as a collection of buildings constructed and interconnected over the last 40 years. The existing building was constrained by a lack of connectivity, confusing circulation patterns and interior spaces that lacked vitality.

The goals of the interior renovation were to:

- Create visual connections between functions.
- Clarify organization and circulation patterns.
- Showcase students and student involvement.
- Create dynamic, energized spaces.

Extensive amounts of load-bearing masonry walls were removed to create vistas between functions—always allowing a unifying view back to the central atrium. A mosaic of multiple-patterned glass types is used throughout the design to reinforce visual connections between spaces and also provide varying degrees of privacy.

With a sense of transparency that the old building lacked, the "new" Student Union/Recreation Center has a more intuitive circulation pattern. The design re-energized the two-story core atrium by placing transparent and translucent spaces around the perimeter.

Trine University, University Center and Center for Technology and Online Resources · *Angola, Indiana*

Firm: Design Collaborative, Inc.

Client:
Trine University; Michael Bock, Vice President for Student and University Operations

Area of project entry category:
73,454 sq. ft.

Cost of project entry category:
$12.7 million

Cost/square foot of project entry category:
$172.90

Completion:
October 2007

Photographer:
Doran Wilson

An activity hub at the center of campus, the new $12.7 million Trine University Center offers 73,454 square feet of amenities in a sleek package of curved architecture, window walls, and black and gray marble floors. Students and the public enjoy indoor and outdoor gourmet dining, plus educational and arts programming in the center's 320-seat Fabiani Theatre. A presidential dining area and catering office enhance the state-of-the-art dining facilities.

A spacious new library provides even greater resources for student success, and the Center for Online Resources keeps students in step with technology advances in its global workplace, Center for Digital Excellence, and multipurpose and digital group training spaces.

The University Center has a strong design concept, centered on the main atrium space. The building is situated between the residential and academic sides of campus, and takes advantage of the student traffic between these two campus centers. The main atrium forms a large "S" shape. All amenities for the building, including the cafeteria, fitness area, bookstore, theater and library, are accessed from this main mall space.

Merritt College, Student Activities Center
Oakland, California

Firm: Don Dommer Associates

Client:
Merritt College; Anthony Powell, Dean

Area of project entry category:
55,000 sq. ft.

Cost of project entry category:
$9 million

Cost/square foot of project entry category:
$164

Completion:
March 2007

Photographer:
Frank Domin Photography

Although conveniently situated at the entrance to campus, Merritt College's student center needed to play a more central role for this Oakland community college. In 2005, The Peralta Community College District hired the architect to revamp the outdated 1970s-era building.

The architect reconfigured and assembled the main building into a color-coded "slanted grid" layout where all student services are situated under one roof. The career center, computer lab, dining services, bookstore and financial aid office are among the amenities that now can be found in this modernized, easy-to-navigate space.

Work included major changes in use; ADA upgrades; replacement or upgrades of obsolete electrical, mechanical and building systems; and inclusion of new data, communication and paging systems to streamline activities. Indoor/outdoor relations were emphasized; recycled materials were used; and efficient heating and cooling systems reduce energy costs. This large project had an aggressive schedule in order for completion to coincide with the school's semester schedule.

University of Michigan, Stephen M. Ross Academic Center
Ann Arbor, Michigan

Firm: JLP/TMP Associates, Inc.

Client:
University of Michigan; Michael Stevenson, Executive Associate Athletic Director

Area of project entry category:
40,085 sq. ft.

Cost of project entry category:
$8,384,000

Cost/square foot of project entry category:
$209

Completion:
December 2005

Photographer:
Christopher Lark Photography

The academic center provides study space by consolidating numerous locations throughout campus into a single facility that enhances academic programming for more than 700 student athletes.

The three-story building, situated north of Yost Field House and adjacent to the Marie D. Hartwig Building, is organized to respond to the massing of Yost Field House while creating a defined entry into the athletic campus. The design, using steeply sloped roof profiles and masonry with precast concrete trim, creates an architectural transition between the Hartwig Building, a Tudor-style original 1912 "Club House" and Yost Field House built in 1923.

The lower level, partially below grade, provides computer labs and tutorial spaces, and opens to a multi-level outdoor courtyard with vistas of the historic Ferry Field Track and Intramural Building.

Situated on the main entry level are the reception area, staff offices, an academic study lounge, group meeting rooms, a breakout room with access to an exterior terrace, and the Wolverine Room, a multimedia teaching space.

The upper level provides space for 18 individual tutorial spaces, three tutorial lounge areas grouped into meeting rooms, and the NCAA Life Skills Facility.

Pacific Lutheran University, University Center
Tacoma, Washington

Firm: Mithun

Client:
Pacific Lutheran University; Sheri Tonn, Vice President of Finance and Operations

Area of project entry category:
98,181 sq. ft.

Cost of project entry category:
$10 million

Cost/square foot of project entry category:
$102

Completion:
September 2007

Photographer:
Juan Hernandez

The goal of the University Center renovation at Pacific Lutheran University was to construct a state-of-the-art multipurpose space that is a home away from home for students, a gathering place for staff and faculty, and a shared source of pride for the entire university community. The renovation was aimed at creating a more student-focused center, and updating and improving the building to maximize its potential as a campus commons.

The new center provides student-centered organizations an opportunity to unite under one roof in greatly improved office spaces, a conference room and recreation areas. The renovation also provided new opportunities for dining services, including the addition of the Old Main Market, a convenience store and a new commons with an updated menu. The updated center provides many university departments with refreshing and approachable office spaces.

The University Center steering committee represented constituents from all over campus, especially departments affected significantly by the renovation. Early in the planning stage, focus groups were organized and, along with other campus groups, participated in the design process.

Berklee College of Music, Cafe 939
Boston, Massachusetts

Firm: MDS/Miller Dyer Spears Inc.

Associated firm: Selbert Perkins Design Collaborative

Client:
Berklee College of Music; John Eldert, Vice President of Administration and Finance

Area of project entry category:
13,500 sq. ft.

Cost of project entry category:
$3.2 million

Cost/square foot of project entry category:
$237

Completion:
November 2007

Photographer:
David Kurtis

Cafe 939 is a new social center serving the diverse Berklee College of Music community. Befitting the college's urban campus, the cafe features a coffee bar and performance venue designed to showcase emerging student talent, local artists and national acts. It has become a dynamic social hub, drawing the Berklee community and the general public. The performance hall features state-of-the-art sound, lighting, video mixing and recording capabilities. Three distinct seating areas with flexible furniture offer a capacity for 200.

The design of Cafe 939 reflects Berklee's distinctly contemporary culture. Acoustic wall panels in the performance hall are shaped in graph patterns inspired by the Schillinger System, a system of visualizing music, and a primary method of teaching music when the college was founded. Design of the tabletops, rugs, cups and picture frames are inspired by resonant patterns discovered in the 1780s in an experiment involving sand, metal and a violin bow. Memorabilia from the college's history line the walls in one enclave of the cafe.

Situated on the ground floor of the Tennis and Racquet Club Building, the cafe has a design that preserves the historic architectural detailing while introducing rich, saturated colors, modern furnishings and high-tech systems in an eclectic blend of old and new.

Harvard University, Cambridge Queen's Head
Cambridge, Massachusetts

Firm: MDS/Miller Dyer Spears Inc.

Client:
Harvard University; Judith H. Kidd, Associate Dean of Harvard College

Area of project entry category:
12,000 sq. ft.

Cost of project entry category:
$3 million

Cost/square foot of project entry category:
$250

Completion:
April 2007

Photographer:
John Horner

Cambridge Queen's Head is a new center for undergraduate social life situated in Loker Commons, on the lower level of historic Memorial Hall. The design team worked with student and administration leaders to transform what was formerly an underused dining facility into a unique, student-run campus pub serving the Harvard community. The pub was named for John Harvard's 17th-century inn and tavern, the Cambridge Queen's Head.

Materials include a rich palette of finishes relating to Sanders Theater, which is situated in the upper floors of Memorial Hall. Historic artwork, memorabilia and Harvard trivia are woven throughout the design, providing meaningful ties to the university's history and a strong sense of place. The design team rummaged through attics, storage rooms and university archives to select these elements, many of which are authentic Memorial Hall details. The gargoyle hanging behind the bar originally hung from the Memorial Hall tower. During the fire of 1956, it fell from the tower and landed safely in a snow bank. It is now on loan from the Fogg Art Museum.

Other reused items include the entry doors, which were recovered from the Memorial Hall attic, and historic art-glass panels, which were added to the Memorial Hall kitchen during its addition in 1911, but later were removed during its 1994 expansion.

Rasmussen College—Lake Elmo Campus
Lake Elmo, Minnesota

Because Rasmussen College is leasing a building for this new campus in a space designed for multiple office tenants, the challenge was to create a cohesive interior, working around the wide floor plan.

Navigation quickly became a critical component: the space was designed for separate tenants, not one organization. To assist with navigation, areas in the building are color-coded, with bold floor patterns defining major areas and intersections.

The entry welcomes students with tile accents and bold patterns to fill the large, wide corridor. From the entry, the space opens to core student services such as the media center and library. A unique grid on the ceiling, with clustered light fixtures, adds an architectural element, and breaks up the length of the hall and size of the space.

Textured glass along the bottom of the open panels allows light, but also privacy for those in the library. The reception area features carpet tiles designed to look like an area rug to break up the corridor and welcome students.

Firm: Paulsen Architects

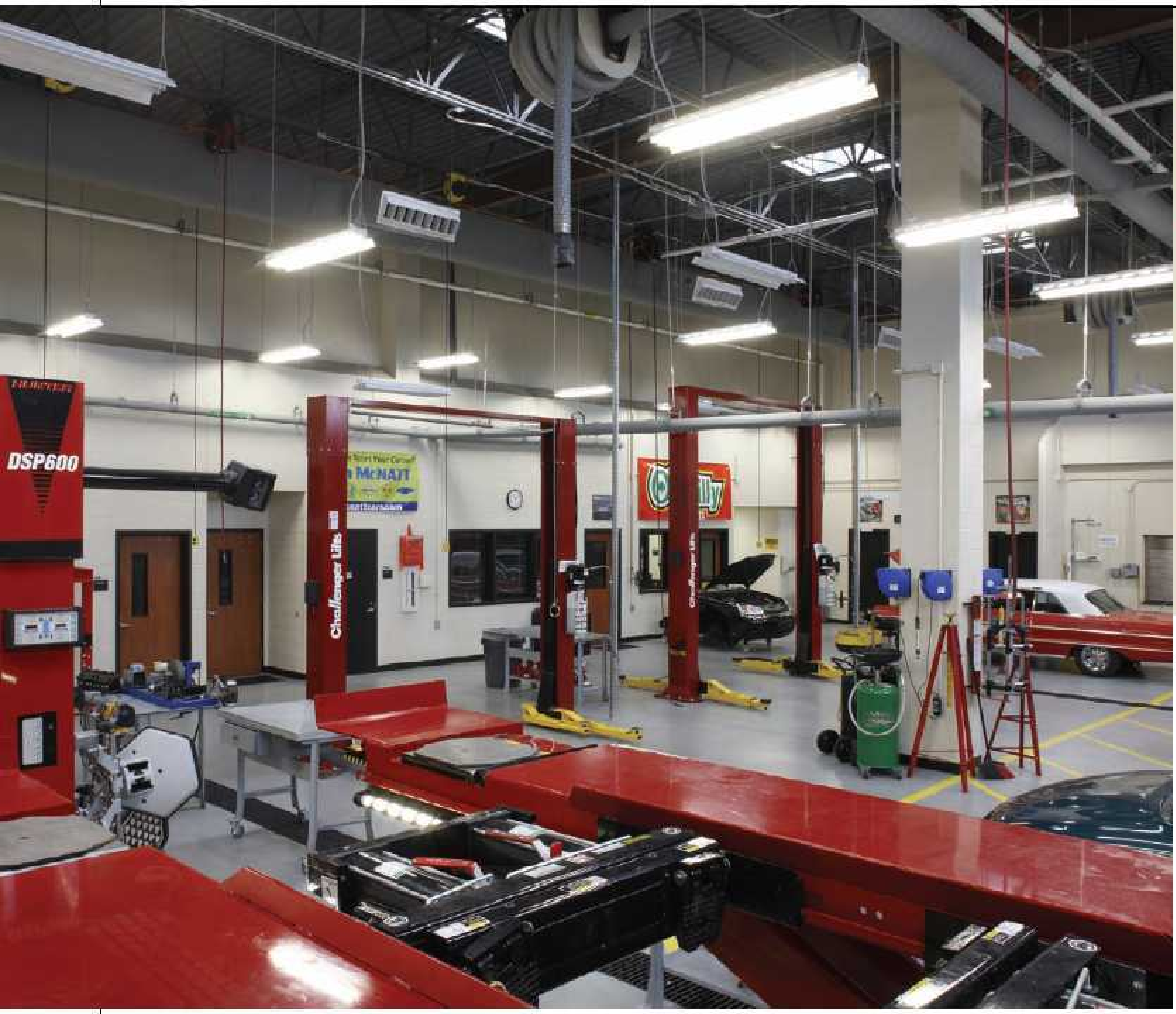
Client:
Rasmussen College; Larry Waite, Vice President of Real Estate

Area of project entry category:
20,475 sq. ft.

Completion:
June 2007

Photographer:
Dean Riggott Photography

Sarah and Troy LaGrone Advanced Technology Complex
Denton, Texas



Firm: PBK

Client:
Denton Independent School District; Ray Braswell, Superintendent

Area of project entry category:
128,792 sq. ft.

Cost of project entry category:
$16,696,532

Cost/square foot of project entry category:
$129.63

Completion:
August 2006

Photographers:
Jud Haggard; Michael Lyon

The Sarah and Troy LaGrone Advanced Technology Complex, situated in the Denton Independent School District, is a 128,792-square-foot specialized facility. The educational program offers a customized, hands-on, state-of-the-art career and technical training center. The designers responded by creating a facility that prepares students in the trade-specific technical and professional skills necessary to compete in a high-demand occupational environment. Offering advanced-technology courses for high school students and adults, the complex also is a professional training center designed to prepare individuals for current and future careers.

Designed to accommodate a diverse range of specialized curriculum, the facility contains nine unique academies, each designed to reflect "real-world" working environments. The academies include education, legal and protective services, personal services, computer technology, medical/applied health science, pre-engineering, visual arts and communication, business, marketing and finance, and applied technology.

The Advanced Technology Complex is truly "one of a kind." There is no other facility in the nation that combines all of these specialized venues on one campus. Through the execution of strategic solutions for many project challenges, the end users and design professionals executed a plan that is intended to raise the bar for future educational facilities not only in Texas, but also across the nation.

Monroe College, Culinary Arts Center

New Rochelle, New York

This state-of-the-art culinary-arts facility, with its daylighting, sparkling stainless-steel equipment and accent colors in a palette taken from the hues of fresh fruits and vegetables, is situated in what had been a dreary auto-repair shop.

Its open-plan layout responds to the faculty's unique vision of a flexible learning space with the concurrent uses typical in a large commercial kitchen. It includes a banquet battery, one pastry battery, and two a la carte kitchen areas organized around a service spine. Unlike a typical commercial kitchen, however, the space was designed for visual transparency in keeping with the college's commitment to creating a culinary-education showcase.

The vestibule functions as an observation point for kitchen activities. Its angled portal into the pastry area follows the slope of the dramatic ceiling within, which conceals ductwork, but also enables natural light to permeate the space from the building's high windows. A new glazed wall to the west, with sunshades for integral climate control, provides a view of student chefs from the adjoining courtyard—a major campus gathering space.

The project team's hands-on approach involved frequent team meetings on site from the start, and early selection and ordering of specialized equipment with long lead times. Close early cooperation among the college, architect, engineers, construction manager and food-service consultant enabled the team to meet the college's ambitious goal of completing the facility from design through construction in less than five months, just in time for the start of school in September.

Firm: Susan Doban Architect, PC

Client:
Monroe College; Marc Jerome, Executive Vice President

Area of project entry category:
3,455.35 sq. ft.

Cost of project entry category:
$1.65 million

Cost/square foot of project entry category:
$477.52

Completion:
August 2006

Photographer:
Kevin Chu/KCJP

CULINARY ARTS

CULINARY ARTS

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facility PLANNING

A guide to planning and design

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In planning the new Thompson Library at Ohio State University, Columbus, one hands-on workshop focused on the program inventory and its placement within the building framework. Photo courtesy of GUND Partnership

Reaching Consensus

Through a consensus-based process, all stakeholders can play a formative role in shaping a new library on campus.

By Youngmin Jahan

Today's academic library is not only a place of formal learning, but also a hub for the informal learning that increasingly is taking place outside classrooms. On many campuses, the library even is replacing the traditional student union as a campus center and a student magnet. Emblematic of an institution's aspirations and values, the library is a major asset for attracting high-caliber faculty and students, as well as a focus of alumni and donor support. And, at the same time that today's library must be designed for a seamless integration of print and digital media, the unprecedented pace of technological change demands that it possess flexibility to meet future needs.

Given the magnitude and multifaceted nature of these challenges, many institutions planning a new or expanded library project seek to involve a broad spectrum of stakeholders with diverse perspectives and expertise. To manage such a process from vision to reality, an institution can benefit by collaborating with a design firm versed in an open process, as well as in library program and design.

Feasibility study phase

A typical building project undergoes four phases: schematic design, design development, construction documentation and construction administration. On occasion, a feasibility study phase precedes the schematic design phase. For a complex library project, the feasibility study phase often is the most critical step. During this period, key issues pertaining to the library and the campus are explored, and the team sets a direction for the course of the project. At this point, it is helpful to reach out to stakeholders, as well as the larger campus community. In order to create a consensus-based decisionmaking framework, a school or university should bring together a cross-section of the community, help them gain a deeper understanding of issues, and then empower them to make smart choices.

An architect team begins by "designing the process," customized to fit each institution's unique culture. A schedule that outlines a series of campus events is developed as the work plan for the phase. The pace is deliberately aggressive to generate excitement and maintain momentum. The work plan should be flexible and anticipate ongoing adjustments and refinements. What remains constant is a focus on three central themes in project feasibility:

•**Master plan**: Understanding the opportunities and parameters inherent in a site and exploring the appropriate architectural response.

•**Program**: Determining the nature and size of various library functions within the building.

•**Budget**: Managing the institution's financial resources to ensure

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that the project culminates into the best possible library for the money.

When an architect is selected for a library project, a library program usually is in place. The new program, however, frequently represents a re-creation of the existing library program and facility, albeit with more generous sizes and improvements. A significant library project—a new construction or a renovation—represents a unique opportunity to aspire to the best library possible, within the confines of the institution's physical, time and budget parameters.

Town hall meetings

To get the feasibility study phase jump-started, a school or university may decide to hold a couple of town hall meetings. This is the ideal way to hear from a large number of stakeholder groups. In a large institution, an online questionnaire before the first town hall meeting can reach many constituents. It serves to advertise the upcoming event and to engage the larger segment of the campus population who may not attend.

For example, the agenda for an initial town hall meeting might reflect the following:

•**Presentation 1: Current Trends in Academic Libraries.** A scholar/teacher in library science or a library director from another institution would be the principal speaker. He or she would present the most innovative ideas and showcase recently completed library projects.

•**Presentation 2: Current Trends in Information Technology (IT).** An IT consultant with expertise in applying cutting-edge technology and communication infrastructures for libraries and information/learning commons is ideal. If possible, an institution's own technology expert also should present.

•**Presentation 3: Case Studies.** An architect showcases projects to illustrate design issues, and ranges of approach, solutions and styles.

•**Forum: LEED and Campus Sustainability.** An architect, a sustainable-design consultant and an institution's own sustainability director can lead this discussion. The focus is on the institution's sustainability goals and related design opportunities for the project.

> To get the feasibility study phase jump-started, a school or university may decide to hold a couple of town hall meetings.

The agenda for a second town hall meeting might include group activities, such as:

•**Exercise 1: Define an Institutional Vision for the Library.** Sample questions: What are some of the special characteristics of this campus? Which building, space or outdoor area do you like most on campus and why? What does the library represent or symbolize on this campus? What should it represent in the future?

•**Exercise 2: Set Project Goals.** Sample questions: What do you see yourself doing in the building? Which activities, both academic and social, would you want to engage in within and immediately outside the library? How could the library programs and services help you to do those?

•**Exercise 3: Prioritize the Wish List.** The list of goals articulated

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and prioritized is an important tool used during the process. For the duration of the project, well beyond the feasibility study phase, these goals serve as the framework for evaluating competing interests or needs.

Workshops

The agenda for each succeeding community event will shift the focus from the most general to the more specific as the project advances further into the feasibility study phase. The number of participants also is adjusted to facilitate the more narrowly focused agenda. The second set of exercises, organized around hands-on workshops, usually involves a working group—consisting of users (students and faculty), staff and other members of departments (facilities, IT, student and academic services)—and by invitation, a number of other campus stakeholders. The working group's size and makeup usually depend on an institution's size, as well as a project's complexity.

For example, the agenda for the first working group meeting might consist of:

- **A Presentation: Master Plan and Project Site.** The focus is on site-related topics and may include the size of a site, its relationship to important campus attributes (such as space, landmark, view, historic building), and vehicular, pedestrian and service access needs.
- **A Hands-on Workshop: Site and Massing Exercise.** Groups of participants (usually 10 to 15 per group) gather around a large "map" of the project site area and are provided with an equal number of blocks, markers and other props. Each team "designs" the library exterior massing using the blocks and indicates entry points, outdoor spaces, the loading dock, roads, paths, parking, etc. on the map. Each team presents its design to the group for discussion.

The second working group meeting might include the following pre-

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sentations and workshop:

•**Presentation 1: Existing Building Assessment—Limitations and Opportunities.** In the case of a renovation, the architect and engineers review the building's structure, floor-to-floor height, condition of systems (heating, cooling, plumbing, fire protection, IT, etc.), building envelope, and major building code and ADA requirements.

•**Presentation 2: Reading Architectural Drawings 101.** The architect pins up sample drawings to illustrate graphic symbols and conventions, and reviews the architectural jargon and terminologies. The project schedule, the goals for each phase and the design process also are explained.

•**Presentation 3: Cost Estimating 101.** The construction manager (CM) or the estimator on the design team explains the basic elements of budget management and the budget-related issues for the project. He or she also defines terms such as construction cost, project cost, contingencies and escalation.

•**Hands-on Workshop: Organization of Library Programs and Amenities.** Participants again are grouped into teams of 8 to 14. Each team is supplied with color boards representing different library programs (e.g., stacks, compact shelving, information commons, reader spaces, librarian stations, 24/7 public areas), scissors, tape and paper cups (to raise the pieced boards to represent different levels). Participants decide how much and in which configuration each program should be arranged on each floor, how these levels might be arranged vertically, and where the entrance(s) and other important building elements should be situated. Then each team presents and explains its "program" objectives.

Clearly, the workshop format can address a range of topics; it might focus only on a single level of the library. It is important to note that the purpose of a workshop is not to advance a solution or an answer. Instead, the workshop is an effective vehicle through which participants can gain a better understanding of the issues, parameters and tradeoffs involved. The result is an elevated level of discourse. For the architect, it also is an efficient tool for communicating and gathering a large amount of information and feedback. It also tends to be a fun, memorable experience for participants. In workshops that include the wider campus community such as alumni and trustees, the interest and enthusiasm generated

In planning Ohio State University's Thompson Library, a town hall meeting gathered a cross-section of library and university stakeholders to help formulate project goals. Photo courtesy of GUND Partnership

Currently under construction, OSU's Thompson Library was designed based on a collaborative, consensus-based design process. Rendering courtesy of GUND Partnership

inherently translate to support and buy-in with the project.

Working meetings

Different configurations of a building can have varying effects on the adjacent campus fabric. At the same time, the massing and configuration of a building have enormous implications for how a program can be accommodated, and the cost of a building reflects size, configuration and major design features. In other words, the master plan, the program and the budget are intertwined and must be considered together within the feasibility study phase.

While the community and working group activities are taking place, and the participants are gaining more sophisticated understanding of the key concepts and issues related to the project and the process, the architect will begin to generate conceptual diagrams. Initially simple, and increasingly more detailed, massing models representing the library's rough three-dimensional characteristics are studied in the context of a master plan strategy. Each model represents a specific square footage for the library and captures the salient design features such as an atrium, a tower, or the use of glass. Conceptual floor plans accompany each model, illustrating the sizes, locations and adjacencies of the major program elements. The team also produces an estimate for each concept option.

The design team (consisting of architects, engineers, estimator and others) and the working group attend a series of working meetings, maintaining the pace set at the start of the feasibility study phase. The design team presents options for the design, the program and cost strategies to the working group.

The next step is for the design team and the working group to review, analyze, quantify and evaluate the concept models. The list of goals—a product of the earlier town hall meeting—serves as the yardstick for comparisons and as the guidepost to ensure that the project does not stray from its established objectives. Although the process might require multiple iterations, by the completion of the feasibility study phase, this collaborative approach will produce a consensus-based design direction—one that not only meets the master-plan challenges, but also adheres to the project budget. ■

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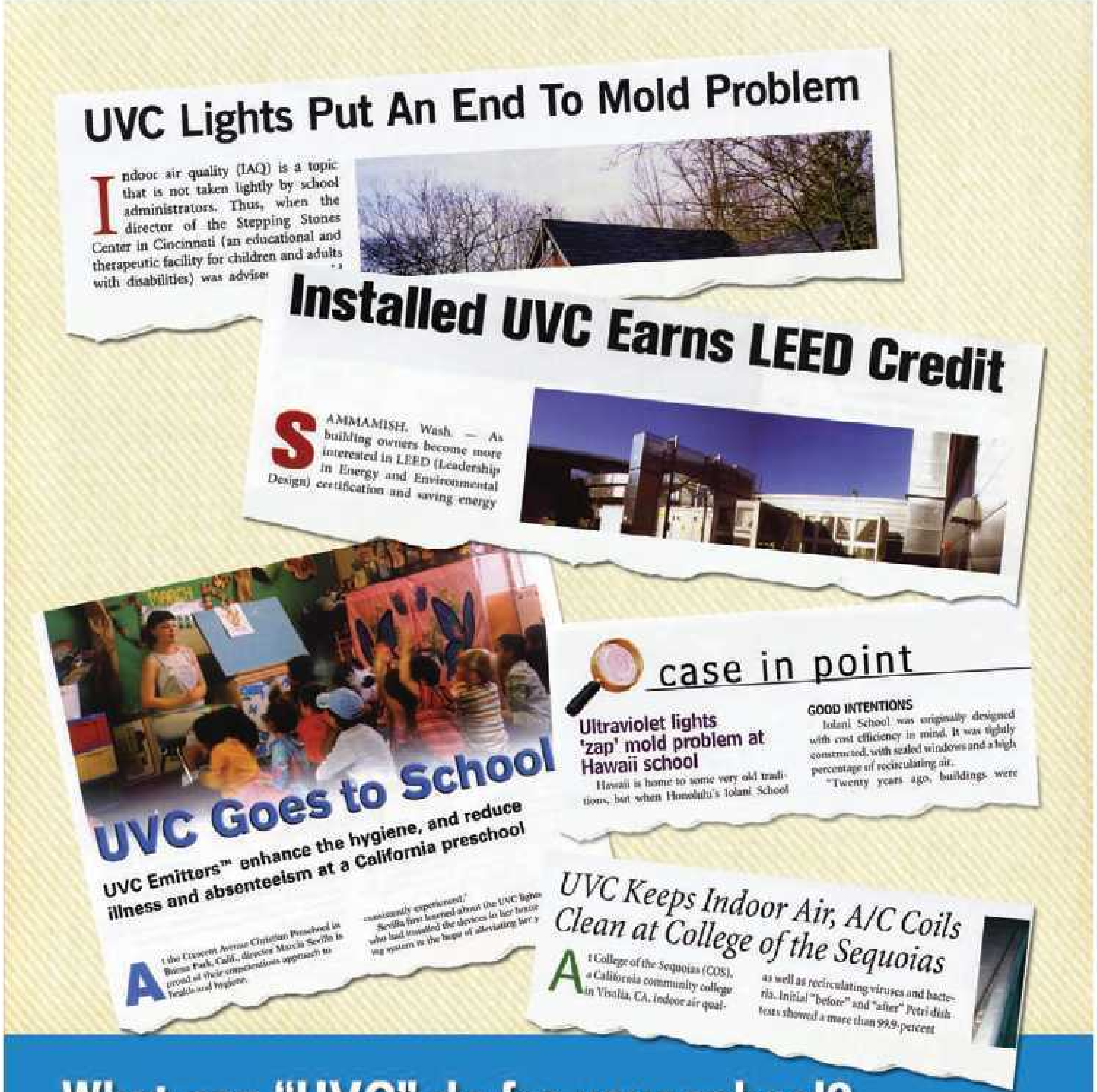

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It is essential for students, faculty and staff to learn and work in a healthful, comfortable environment.

Controlled Breathing

Saving energy and reducing risk in education facilities with CO_2-based ventilation control.

By John Welch

Proper ventilation is an important part of maintaining a comfortable, healthful, productive environment for students and faculty. Yet, one study found that 86 percent of classrooms had incidences of inadequate ventilation, and a California study found that classrooms had inadequate ventilation 42 percent of the time. With statistics like these, the question becomes: "What is the best way to monitor and control ventilation in the classroom?"

CO_2-based ventilation control (also called demand-controlled ventilation or DCV) is one solution. This building-control strategy optimizes the outside-air intake based on measured ventilation rates. Opti-

mum means the building will not be under- or over-ventilated. The result of under-ventilation can be poor indoor air quality. Over-ventilating wastes energy because the air often must be conditioned before being sent into the building.

Useful comparisons

Indoor carbon dioxide (CO_2) levels form the basis of ventilation control. There is a clearly defined relationship between indoor CO_2 levels and per-person ventilation rates. This relationship is recognized by ASHRAE, ASTM and the EPA.

Students, staff and faculty breathe in oxygen and exhale CO_2. Outdoor air or ventilation has a very low and typically constant CO_2 content and, when introduced into a room, dilutes the CO_2 exhaled by people. High indoor CO_2 levels mean there is not enough ventilation entering the room. Low CO_2 levels indicate over-ventilation.

The indoor CO_2 reading allows a HVAC system's outdoor-air intakes to modulate based on the building's actual load. Maintaining the proper indoor CO_2 level ensures required ventilation rates are met.

CO_2-based ventilation control should be applied in spaces such as classrooms, offices, auditoriums, gymnasiums, cafeterias and lobbies. The benefits can include:

•**Helping ensure a comfortable, healthful indoor environment.** Numerous studies link proper ventilation to a healthful indoor environment. For example, a Lawrence Berkeley National Laboratories research paper on indoor air quality, ventilation and health symptoms in schools found that headaches, dizziness, drowsiness, respiratory and throat irritation, and lack of concentration symptoms increased with high CO_2 concentrations (i.e., low ventilation rates). A recent EPA report stated that student use of inhalers dropped 50 percent after IAQ improvements were made in two San Francisco schools. Ventilation also has a significant effect on sick building syndrome symptoms and perceived air quality.

•**Increased funding.** Many K-12 school districts receive state funding based on student-days or average daily attendance (ADA). Inadequate

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ventilation has been shown to increase absenteeism by 10 to 20 percent. Using CO_2 control to maintain proper ventilation can reduce absenteeism, which increases state funding. Even a small reduction in absenteeism can substantially increase funding.

•**Improved student performance.** According to a recent study published in the *ASHRAE Journal*, student scores increased significantly when the indoor CO_2 level was kept at or below 1,000 ppm. This is backed up by a European study in which student scores were lower and health symptom responses higher in classrooms with high CO_2 levels (i.e., low ventilation rates).

•**Reduced risk.** Having a comfortable, healthful environment reduces the possibility of an illness blamed on poor indoor air quality.

Second, there is a clearly defined and recognized relationship between indoor CO_2 levels and ventilation rates. Documenting indoor CO_2 levels shows the building is in compliance with codes and standards.

How does school administration respond to an illness blamed on poor indoor air quality if there is no means of measuring ventilation in the building? Performing an IAQ study weeks after the reported incident does little to show compliance. However, using CO_2-based ventilation control gives administrators a way of proving that ventilation codes and standards were being met during the time in question.

•**Energy savings.** CO_2-based ventilation control delivers energy savings compared with a fixed-ventilation approach. Fixed ventilation assumes that the building is always fully occupied, so the maximum prescribed amount of outside air enters the building during all equipment operating hours. A CO_2 ventilation approach is based on the actual ventilation load of the building.

For example, let's examine a classroom designed to hold 25 students. A fixed ventilation approach will provide enough outside air for 25 students, whether there are 5 or 25 present. When only 5 students are in the room, the fixed-ventilation method brings in more outside air than is required.

In this example, CO_2-based ventilation control would reduce the outside air intake to bring in the correct amount for 5 students. On a hot summer day or cold winter morning, the opportunity to reduce the amount of outside air saves money because it does not have to be conditioned. The typical payback period is between 6 and 18 months.

Several companies offer energy-analysis programs to calculate the expected energy savings when using ventilation control vs. fixed ventilation. Also, schools should check with their local utility company about rebates for using CO_2 sensors in an education facility.

> Documenting indoor CO_2 levels shows the building is in compliance with codes and standards.

Other benefits

CO_2-based ventilation control offers other benefits:

•CO_2 control doesn't care where the outdoor air enters the building. For example, most schools have doors that open and close constantly, allowing outdoor air into the building. With CO_2 control, this additional source of ventilation is accounted for. Fixed-ventilation approaches, such as using outdoor airflow monitoring stations, cannot detect such natural ventilation, and the facility receives additional over-ventilation.

•Space CO_2 sensors measure the ventilation that reaches where students are situated. Thus, ventilation effectiveness is taken into account.

•CO_2 control detects problems with a ventilation system. For example, improper CO_2 levels can indicate a broken damper motor or linkage.

•LEED (Leadership in Energy and Environmental Design) certification program points are available for projects using CO_2-based ventilation control.

•ASHRAE's 90.1 energy-efficiency standard requires the use of CO_2 control in certain applications.

•ASHRAE's Humidity Control Design guide shows that outdoor air ventilation is the source of 60 percent of the humidity inside the building. Using CO_2-based ventilation control to reduce the outdoor air intake when the building is not fully occupied results in reduced humidity control because less moisture enters the building. ■

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When planning the new Athletic Performance Center at Bradley University, Peoria, Ill., administrators worked with residents of a neighboring community and the city council to address concerns about the new facility.

A Vision for Growth

Expanding an education campus within established neighborhoods requires creativity and engagement.

By Thomas J. Seymour

Many colleges and universities are experiencing significant campus growth in response to the demands of increasing enrollments and evolving programs that require advanced technology and resources. Student-centered facilities in particular, including expansive recreational centers, multi-use student unions and attractive new residences, are helping to drive institutions of higher education toward major construction and capital-improvement programs.

As urban colleges and universities look to expand in order to accommodate growing programs and enrollment, working with established neighborhoods surrounding the campus often becomes a critical component to development. In order to generate community good will and support, it is important to communicate early and often with neighbors, present a clear vision for growth, and optimize economical solutions for sensitive land use and facility design.

For older campuses set in dense, established neighborhoods, the demand for growth in facilities and infrastructure presents a clear challenge in terms of balancing the needs and concerns of neighbors with those of colleges and universities. Not surprisingly, neighbors on the fringes of campus boundaries often

raise concerns about the impact of campus growth, citing the scale and appearance of buildings, the impact on views, building shadows, pedestrian and vehicular traffic, lighting, noise, parking and security.

Early in the master-planning process, the impact of campus expansion on neighborhoods situated around the "collar" of the campus should be considered. Colleges and universities occasionally minimize the importance of this aspect by focusing on generating master plans that meet the priorities of program growth, capital campaign strategies and local government agencies without addressing potential community concerns. Early engagement with the community to introduce the vision for growth and address the goals of the master plan through clear and straightforward communication can be vital to obtaining local buy-in and support.

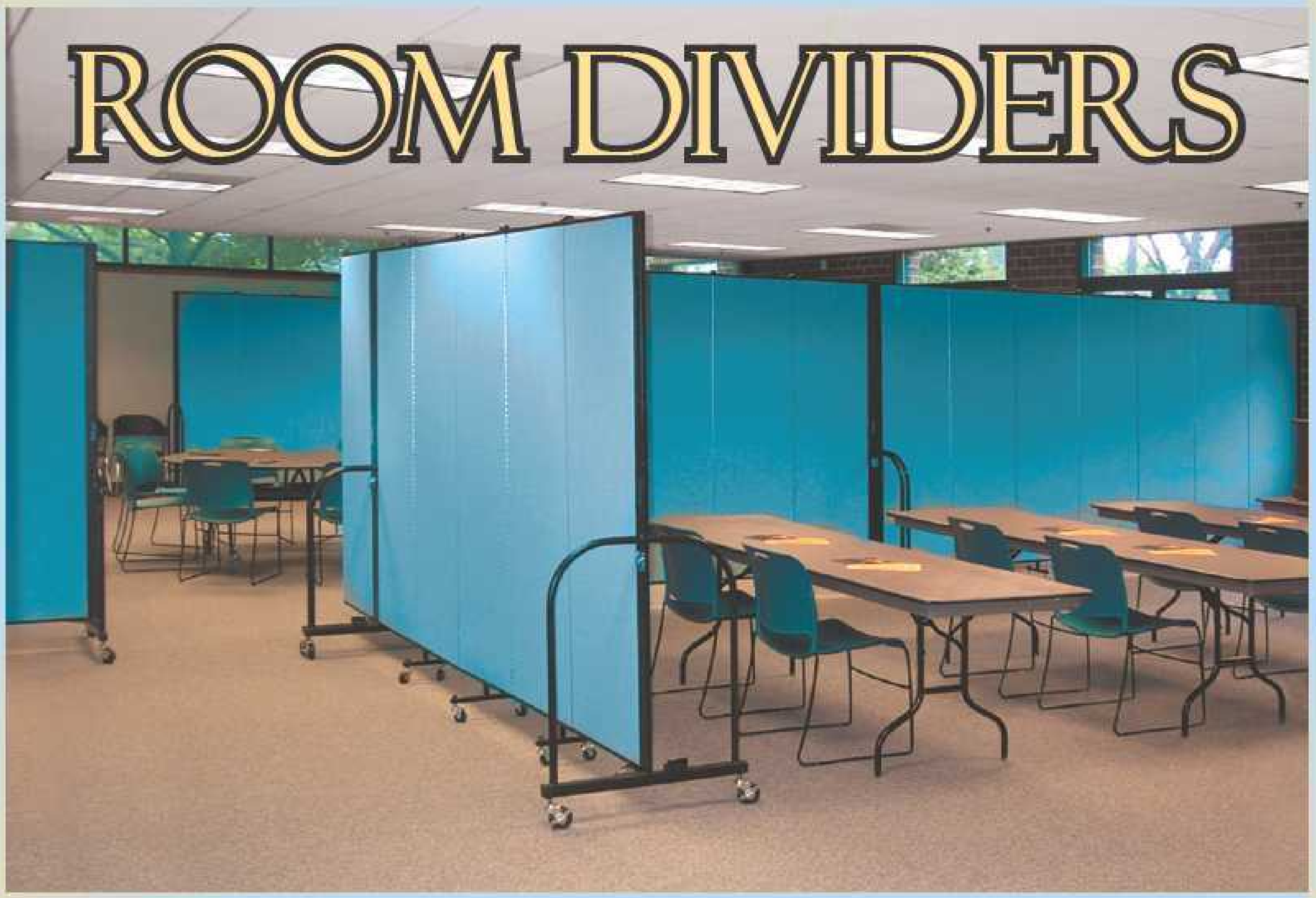
What works best?

First, work with an experienced architect and planning team that has the expertise and sophistication to help bridge campus and neighborhood priorities. Flexibility is important in order to allow for the kinds of compromises and creative solutions that assuage neighborhood concerns while still meeting the programmatic and budgetary parameters of the institution. A local presence and established reputation for civic mindfulness on the part of the architect may be vital in building credibility at the outset.

Second, engage the community in open and candid forums that encourage feedback and allow for everyone to have a voice. As a starting point, consider informal meetings in the homes of key community leaders or neighbors near campus boundaries.

Informal, preliminary gatherings with community members that provide candid feedback often lead to more productive public meetings and community forums. Concerns about the appearance and scale of buildings, the size of building footprints, traffic, parking, security and construction issues can be addressed readily by the institution and its design team.

Again, flexibility and a willingness to address issues that arise from the community are essential. This may lead to compromises in aspects such as facade treatments, building heights, setbacks, landscaping and



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Bradley University's new Athletic Performance Center is scheduled to open this fall.

A commitment to students and the community

Established in 1897, Bradley University is set on an 85-acre campus in northwest Peoria, Ill. In 2006, after working with residents of a neighboring community and the city council, the university finalized a 15-year master plan that called for new construction on a 10-acre parcel that had been acquired recently. The "Bradley Renaissance" includes the development of a new student recreation center and an athletic performance center with a 4,200-seat arena that will serve as home court for the women's basketball and volleyball teams.

A 600-space parking garage was among the first priorities in implementing the master plan. The garage, designed with a detailed articulation along the facade to complement the nearby residential community, alleviates the demand for student parking along neighborhood streets. New perimeter lighting enhances security, but is designed at a neighborhood scale. Several traffic control and "calming" measures also have been implemented, including new traffic signals and barriers.

Design of the recreation center and the new arena incorporates ample expanses of glass, enlivening the buildings and allowing activities to be viewed from the outside. Generous amounts of landscaped green space, plazas and new walkways help continue a residential feel into the structures along the campus border.

"A capital program of this size requires a mosaic of communication with neighbors and public officials," says Gary Anna, who is overseeing the master-plan development for the university. "Experience is a great teacher and we've learned it's difficult to communicate too often with neighborhood and community representatives. Nearby property owners understandably are concerned about changes within their neighborhood. Every institution has its own mindset and pressure points in terms of balancing program needs and community concerns.

"Our approach is to approach our growth as a good neighbor would," says Anna. "We consider what's in the best interest of the students and the city, as well as our closest neighbors. We've found that obtaining early feedback really helps us to address concerns and be respectful of external constituencies. It's an ongoing process."

other types of screening. It may be important to demonstrate steps taken in design to minimize the scale and massing of buildings, and perhaps to "humanize" structures by reducing large expanses of walls or facades and incorporating more glass to allow for views into buildings. Other elements that help to transition, buffer or screen new construction should be explored and discussed with the community, such as perimeter lighting, fencing, landscaping and green space, and changing street patterns.

During community meetings, make ample use of visuals, such as plans, renderings and simulated graphics that depict building appearance, elevations and footprints. Make images available electronically so they can be shared and discussed openly by neighborhood associations and local residents. In addition to community meetings, post frequent updates in a section of the campus website, and keep the media informed of the development process.

Open and direct lines of communication with communities are imperative. Although institutions should take advantage of the expertise of architects and design team members in framing the vision for expansion, creating graphics that portray this vision, and sharing this information in public forums, campus representatives should be careful to take a leading role in the process, rather than cede this responsibility to the architectural team. Emphasize the role of the institution as a vital part of the community, and celebrate capital improvements as an important part of community development and enhancement.

> As a starting point, consider informal meetings in the homes of key community leaders or neighbors near campus boundaries.

The implementation of a master plan can be an intense process, but open communications will help to avoid tension and surprises. It requires a commitment to community outreach and a willingness to be as responsive as possible. ■

Seymour is executive vice president with PSA-Dewberry, Peoria, Ill., a national design firm that has worked with Bradley University for more than 25 years. He can be reached at tseymour@dewberry.com.

WEB 101

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Many campuses are taking measures to reduce the number of delivery sites and loading docks.

Sights Unseen

With effective materials-management plans, education institutions can embrace the concept of "the invisible campus."

By Robert M. Brandon and Arthur A. Spruch

At Brown University, Providence, R.I., the campus' unsightly "Dumpster Alley" service area was converted into a swath of beautiful green space. At another institution, plans were developed to expand the university's underused underground tunnels and use electric carts in them to move supplies and utilities among various campus buildings. Another university used natural topography and hillside sites to camouflage services, opening up more green space for students and foliage.

Across the nation, colleges and universities are embracing materials-management planning, a creative and comprehensive solution to managing operations and support

services. On many campuses, the receiving, delivery, storage, and removal of supplies and materials consumes a vast amount of space. As institutions expand, the amount of space devoted to infrastructure and support grows rapidly. The unintended result of this expansion: a cluttered, noisy and often inefficient campus. Delivery trucks compete with pedestrians; loading docks are in plain sight; trash containers sprout up; and lobbies, hallways and stairwells are used for storage space.

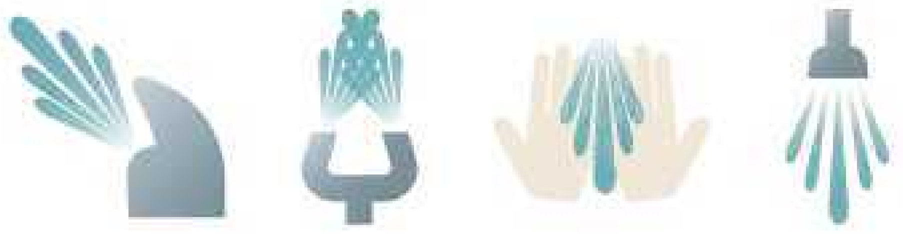
To better manage support space, colleges and universities are embracing the concept of "the invisible campus." With a strategic materials-management plan, an institution's service infrastructure can be turned into a virtually invisible and sustainable environment, and a college or university can reclaim valuable campus real estate.

Why "the invisible campus?"

An effective materials-management plan finds innovative and effective ways to take the unattractive and unintended effects of managing operations and support services (delivery-truck traffic, loading docks, storage facilities, materials distribution, recycling and waste removal) and puts them largely out of sight. The goal is to consolidate and efficiently manage core services to create truck-delivery and service-vehicle routes that reduce vehicle or pedestrian conflicts; loading docks and delivery sites that reduce redundancy and increase effectiveness; solid and hazardous waste removal, storage and recycling that reduces cost; and utility infrastructure and service equipment relocation that improves campus aesthetics.

A materials-management plan often is provided as part of a capital-development or master-planning project. Quite often, the plan will make better use of underground or other off-site locations for services in the design of new or renovated facilities.

For example, one university built a new laboratory to replace an existing building that contained central support functions for the entire campus: truck deliveries, mail delivery, waste management and material storage. A materials-management plan was put in place that included mapping numerous underground tunnels and modifying them to place much of the university's support infrastructure below grade. A new underground service center was situated in the multi-story service complex beneath the new facility. By taking an asset the school already had, operations and



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support services were organized in a more beneficial and productive way.

Better campus circulation

One of the keys to a successful materials-management plan is documenting and understanding all facets of the problem. Doing so means using a full spectrum of experts—architects, planners, traffic, environmental, solid waste, and civil engineers—who work together to ensure every challenge is addressed. Inefficiency and campus image problems can drag down even the most successful capital-expansion or master-planning project, so careful materials-management planning is a must to ensure these projects are successful.

At Brown University, the "Dumpster Alley" area was redesigned with grass, trees and benches. The improvement helped change the flow of student traffic, providing a central path between the two sections of the Brown campus. But just as important, it gave students, faculty, staff and visitors more public space.

Brown University's plan also included developing a better campus circulation infrastructure, another effective way in which educational institutions can achieve "the invisible campus." Campus service points at Brown were clustered to reduce the number of loading docks and truck parking, thus reducing redundancy and increasing effectiveness.

Harvard University, Cambridge, Mass., brought about better campus circulation infrastructure during the institution's ongoing Northwest Corner project, the most significant new addition to the law school campus in nearly 125 years. The materials-management plan involved resolving an "island" approach to shipping, receiving and vehicle movement, as each building on the campus had developed its own system for vendors, logistics and delivery.

The solution included designing a new central loading facility to meet campus needs, as well as consolidating service areas and docks from three separate buildings into one.

Developing better campus circulation infrastructure also can mean re-evaluating truck delivery and service-vehicle routes. At Harvard, vehicle type, size and schedule were studied to make these more compatible with the surrounding neighborhood. Other institutions transform their campuses by reducing truck traffic, creating a safer environment for pedestrians and a more attractive environment for nearby retail and student use.

Re-evaluating solid and hazardous waste removal, storage and recycling

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is another way education institutions can achieve "the invisible campus." This can reduce cost and make the campus more environmentally friendly.

At the University of Pennsylvania, Philadelphia, a materials-management plan included efficient waste-management guidelines and increased recycling initiatives, which was done in part with the building of the institution's new Annenberg Public Policy Center.

Myriad benefits

Education institutions can reap the benefits from effective materials-management plans. For starters, institutions accrue long-term cost savings, as consolidating, reconfiguring and managing a campus' core infrastructure reduces annual operating costs.

Institutions also will get the most efficient use of campus real estate. Green roofs can be created above service facilities to emphasize natural topography, and service spaces can be reconfigured to support safe pedestrian environments, including new pathways and courtyards. Overall, a plan can increase green space on campus greatly.

An effective materials-management plan also means a more holistic approach to managing vehicle use and emissions, solid waste, hazardous waste, recycling and utility services. As a result, this means a greener, more sustainable environment, a reduction in that institution's carbon footprint, and a manifestation of the many demands today for institutions to become environmentally friendly.

And finally, an effective materials-management plan can improve campus aesthetics. Removing unsafe and unsightly conditions, placing core services out of sight, and creating a more pedestrian-friendly campus will improve the visual and physical sense of place for students, faculty, staff and visitors. This can help improve the quality of life for students, and be used as a valuable tool in both recruitment and retention. ■

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Stetson University College of Law, Gulfport, Fla., has taken a conservative approach in its green efforts but recognizes that water-efficient plumbing is a prime target for savings.

Necessary Upgrades

New and old schools alike can benefit by designing restrooms to be more water-efficient.

By John Watson

When designing restrooms for a new school, it's easy to start fresh with all-new plumbing products and systems that provide the latest functionality and greater water savings to meet green, or sustainable, objectives. For renovations, the options differ. Although water-efficient fixture and fitting choices for existing restrooms are a little more complex, they certainly are worth pursuing.

There's been so much emphasis on sustainable products and programs in new building construction, some mistakenly think it's too late or not worthwhile to go green with buildings that have been around for 20 years or more. Administrators

are realizing the green movement applies to existing buildings too, and many are beginning to do something to improve the efficiencies of their education facilities.

Michelle Moore, senior vice president, policy and public affairs for the U.S. Green Building Council (USGBC), recently testified before the U.S. Congress about the importance of green buildings. Focusing on schools in particular, she cited green buildings' impact on the environment and the economy, as well as on the health and productivity of occupants.

"School buildings represent the largest construction sector in the country, and 20 percent of the country goes to school every day," says Moore. "It's fundamental to promote the design and construction of green schools, which play a tremendous role in bettering the health and performance of our students and children. Every new building coming out of the ground today should be built green, and every existing building should be retrofitted."

Table 1

Energy Policy Act of 1992 fixture performance requirements

Fixture	EPAct 1992 flow requirements
Toilets	1.6 gallons per flush (gpf)
Urinals	1.0 gpf
Showerheads	2.5 gpm @ 80 psi Or 2.2 gpm @ 60 psi
Commercial faucets	2.5 gpm @ 80 psi
Metering faucets	0.25 gallon per cycle @ 80 psi

Table 2

Baseline calculations for LEED-EB: O&M

Daily uses	Fixture type	Duration (flushes); faucets shown in minutes	Flow rate (gpf); faucets shown in gpm	100% water use (gallons)	120% water use (gallons)
50	Men's Water Closets	1	1.6	80	96
150	Women's Water Closets	1	1.6	240	288
100	Men's Urinals	1	1	100	120
300	Conventional Sinks	0.25	2.5	187.5	225
	Daily Total			607.5	729
	Annual Work Days			260	
	Total Annual Volume (gallons)			157,950	189,540

Assumptions: Males use urinals twice per day, closets once per day; females use closets three times per day. Both males and females use faucets three times per day.

Retrofit vs. new

Facility renovations and building additions, of course, offer prime opportunities to improve water efficiency in the restroom. This can be achieved either by installing new water-efficient plumbing products and systems or by retrofitting existing plumbing fixtures with kits that reduce water usage or offer additional functions, such as upgrading manual flush valves to sensor operation (see sidebar on p. 178).

With or without a Leadership in Energy and Environmental Design (LEED) project pushing the need for plumbing updates, many factors drive the water-efficiency trend in schools. These factors include rising water and sewer costs, as well as local water-use restrictions.

Toilets and urinals often are buildings' biggest indoor water users, so it makes sense to focus on these fixtures. Restroom renovations sometimes call for completely replacing the existing plumbing products with new, more water-efficient models. Flushometers using 1.6 gpf or less will not work on 3.5 gpf toilet bowls, for example. The fixture flush volume typically should match the flush volume of the flushometer valve.

For technologies such as pressure-assist 1.0 gpf toilets or waterfree urinals, it is necessary to replace the equipment with new fixtures. These systems cannot be retrofitted onto existing fixtures. Keep in mind that removing old toilet and urinal fixtures is a fundamental part of the retrofit process. Fixture replacement may be disruptive, but it's worth it to achieve savings and maintain peak performance.

When replacing the fixture cannot be justified, low-consumption flush valve retrofits are an alternative. In some cases, it is possible to replace 3.5 gpf parts with 2.4 gpf parts. This saves 1 gallon of water per flush, but some level of performance may be lost.

In addition, regular maintenance on fixtures can reduce water consumption. Leaks are one of the biggest causes of wasted water. A faucet drip or toilet leak can waste up to 15 gallons of water a day, or 105 gallons a week, for a total of 5,475 gallons of wasted water a year.

LEED and schools

The USGBC's LEED Green Building Rating System certifies buildings that meet key requirements for sustainable development and design. The two LEED programs for schools are: LEED for Schools, which is suitable for new construction and major renovations in all types of schools and is the sole option for K-12 schools, and the newly revamped LEED for Existing Buildings: Operations and Maintenance (LEED-EB: O&M), which only applies to renovations in higher-education facilities.

LEED projects are evaluated within six environmental categories. Restroom plumbing falls into the Water Efficiency (WE) category.

There are WE category differences between the two point systems. The LEED for Schools rating system awards WE points if it can be demonstrated that the designed plumbing systems will collectively consume less water when compared with a national code standard. In the LEED-EB: O&M rating system, a baseline limit of water usage is first established by the age of the building; points are awarded based on how well the building performs above that baseline.

LEED-EB: O&M includes one required WE prerequisite and optional WE credits, whereas LEED for Schools only involves optional WE credits.

LEED-EB: O&M presents an opportunity for higher-education facilities to make sustainable improvements to their existing infrastructures. In an effort to reduce a school's water usage, the LEED-EB: O&M WE prerequisite focuses on reducing fixture potable water usage to a level equal to or below the building's water-usage baseline.

Because the focus is on fixture performance, the baseline is fairly flexible and is based on what's best for each facility, depending on its age. The baseline is established at 120 percent of the total water usage if all of the building's fixtures meet the Energy Policy Act of 1992 (EPAct) fixture performance requirements (see Table 1).

To better understand the LEED-EB: O&M calculation methodology, let's presume we have a university administrative building with two restrooms. The men's restroom has two urinals and two toilets. The women's restroom has four toilets. Each restroom has two sinks with a manual faucet. There are 50 men and 50 women who occupy the building during office hours.

Create a spreadsheet listing each water-using fixture and the frequency-of-use data. This should include the number of female and male daily uses, duration of use and water-volume use. There are no set criteria for determining daily use or duration of use, so these items can be estimated

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based on the project's program requirements. These values are used to calculate the total potable water used for each fixture type and gender. Use EPAct fixture flow rates for the baseline case. Then calculate 120 percent of that total (see Table 2).

Graywater or rainwater harvest volumes must not be included in baseline calculations. In our example, the EPAct 100 percent usage is calculated to 157,950 gallons of water used annually, and the building baseline is calculated at 189,540 gallons of water used annually. This baseline is referenced in further WE Credits 2.1, 2.2 and 2.3, where the thresholds are 10 percent for WE 2.1, 20 percent for WE 2.2, and 30 percent for WE 2.3.

In contrast, LEED for Schools guides the design and construction of new buildings and major renovations. Under LEED for Schools, WE Credits 3.1, 3.2 and 3.3 are achieved by employing strategies that in aggregate use 20 percent, 30 percent and 40 percent less water, respectively, than the water-use baseline calculated for the building, not including irrigation, after meeting the EPAct fixture performance requirements.

LEED for Schools also promotes water-efficient plumbing technologies that can be used to contribute to achieving WE 2.2, Innovative Wastewater Technology. This strives to reduce generation of wastewater and potable water demand, while increasing the local aquifer recharge. This often is the most challenging credit in the Water Efficiency section. To achieve this, one option is reducing potable water use by 50 percent through the use of water-efficient fixtures, such as toilets and urinals, or non-potable water, such as captured rainwater, recycled graywater, and on-site or municipally treated wastewater.

Calculations are based on estimated occupant usage and include only water closets, urinals, lavatory faucets, showers and kitchen sinks. Installing high-efficiency fixtures, such as low-flow faucets and waterfree urinals, and reusing stormwater and graywater for non-potable applications, such as toilet and urinal flushing and custodial uses, are among the ways to qualify for these credits.

Green construction can lead to a 32 percent reduction in water use, cutting costs for both the school and society in general through reduced infrastructure costs, according to "Greening America's Schools," a report sponsored by the American Federation of Teachers, the American Institute of Architects, the American Lung Association, the Federation of American Scientists and the U.S. Green Building Council. By specifying plumbing systems that automatically save water, you're helping save water—even if restroom users are oblivious to the technology. ■

High on efficiency, low on water usage

Maximum Performance (MaP) testing results show that it is toilet design, not just water volume, that allows some toilets to operate better than others. In fact, toilets using less water than the standard 1.6 gallons of water per flush (gpf) can work as well, or better, than toilets that do. MaP tests, which are run by an independent research group, rank pressure-assist and tank-type toilets of various flush volumes according to how successfully they eliminate simulated waste.

High-Efficiency Urinals (HEU) and High-Efficiency Toilets (HET), which are fixtures that use less water than current federal maximum levels, are becoming increasingly popular as people recognize their value and hear about MaP testing and personal testimonies attesting to their effectiveness.

By definition, HEUs use no more than 0.5 gallons of water per flush, compared with the current maximum of 1.0 gpf for urinals, and they can flush very effectively with as little as 1 pint of water. Waterfree urinals are considered HEUs.

HETs lower water consumption by about 20 to 40 percent. Because toilets account for the highest amount of water used in the restroom, this adds up to big savings. HETs use 1.28 gpf or less and are required to meet the same flushing and drainline carry performance requirements as 1.6 gpf fixtures.

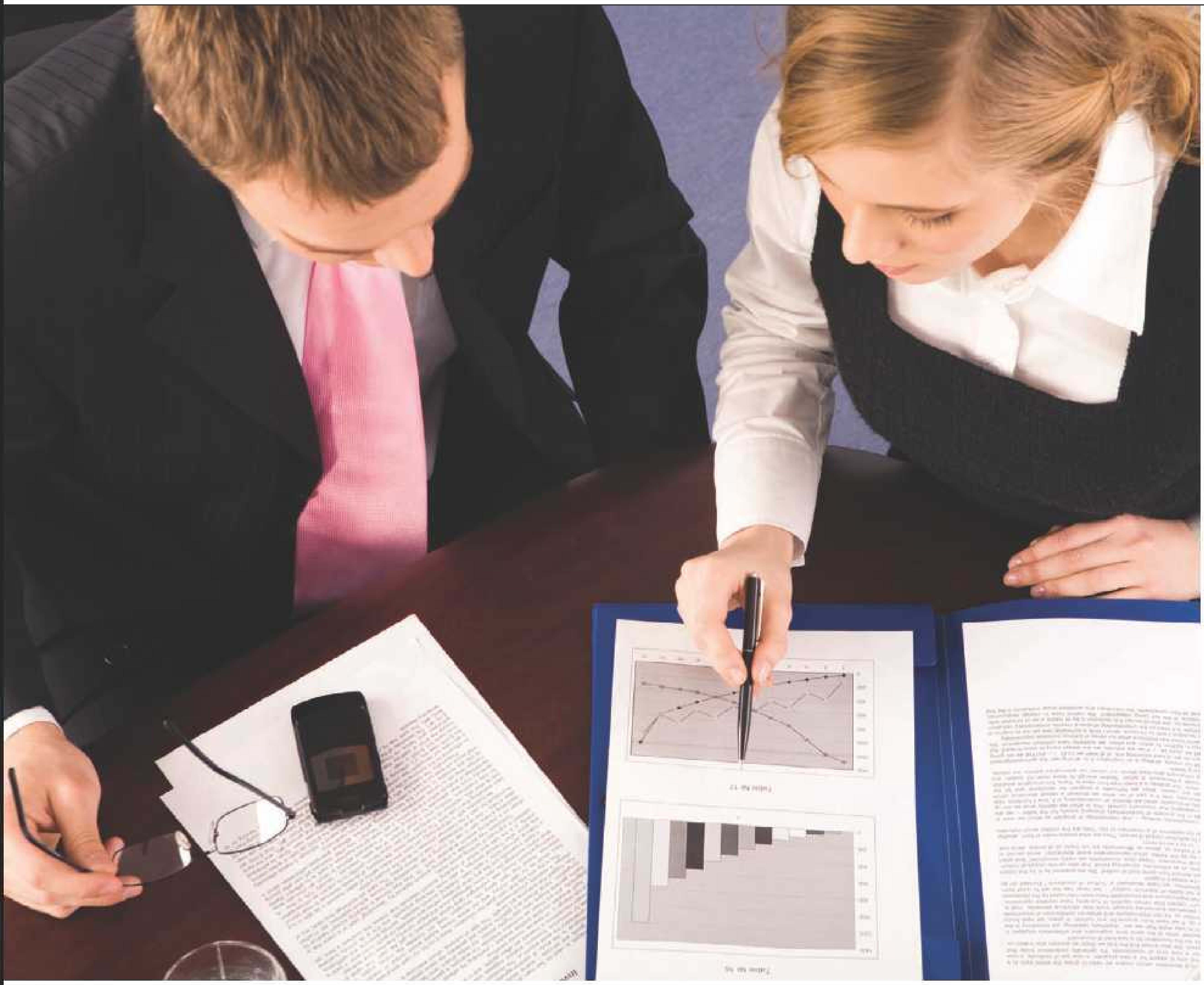
Dual-flush HETs provide a few basic advantages: They substantially reduce water usage and offer a good return on investment. Dual-flush flush valves can be activated manually or electronically. Manual dual-flush valves have been commercially available in the U.S. and Canada for a few years; electronic dual-flush valves are newer. Schools that already have installed dual-flush Flushometers are reporting water savings of as much as 50 percent.

Manual dual-flush systems give restroom users the option of a reduced or regular flush, depending on need. Push the handle one direction and get the full 1.6 gpf. Push the handle the other way for the reduced 1.1 gpf flush.

The new electronic dual-flush flush valves feature buttons for selecting a flush cycle. If a user walks away without pressing a button, the valve automatically initiates a full or reduced flush cycle based on how long the user stays in the sensor range. Consequently, this automatic operation immediately overcomes restroom visitors' learning curve because it doesn't rely on user selection or habit change.

Facilities can either add electronic or manual dual-flush functionality to installed Flushometers using a retrofit kit, or they can purchase a complete flush valve that includes dual-flush operation. When retrofitting a standard flush valve with a manual dual-flush kit, for example, you simply replace the standard Flushometer handle with a dual-flush handle. The dual-flush retrofit handle will work on most standard 1.6 gpf flush valves.

Watson is the director of technical services for Sloan Valve Company, Franklin Park, Ill., a manufacturer of water-efficient plumbing products and systems. He can be reached at john.watson@sloanvalve.com or (800)982-5839.



Although first-time data collection can be challenging, the process will make it easier for future inventories.

Carbon on Campus

Practical advice to help education institutions avoid the pitfalls of a first-time carbon inventory.

By Charlotte Mace

As concern grows about the effect of greenhouse gas (GHG) emissions on the climate, the educational community is leading the effort to address the problem. More than 500 colleges and universities have signed the American College and University Presidents' Climate Commitment (ACUPCC), promising to reduce carbon emissions dramatically. Secondary schools are not part of the ACUPCC, but many are undertaking their own GHG emissions reduction efforts, and the ACUPCC provides a framework for reducing any campus' carbon footprint.

The ACUPCC requires signatories to "complete a comprehensive inventory of all greenhouse gas

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emissions (including emissions from electricity, heating, commuting and air travel) and update the inventory every other year thereafter." Many campuses that have signed the ACUPCC have never conducted an emissions inventory or quantified their carbon footprint, and are not sure how to tackle the process.

Sifting through

The ACUPCC offers guidance, but it is not comprehensive, and it leaves many specific questions for individual campuses to answer. There is a lot of confusion about how to determine a carbon footprint, and certain key issues must be thought through in advance, or the process can be a struggle.

The six essential steps to completing a GHG emissions inventory:

•**Step 1: Establish commitment.** It certainly is possible to conduct a GHG emissions inventory without buy-in from the highest levels of campus administration, but having the president or other members of the senior administration on board will make the process much easier. If a campus already has signed the ACUPCC, the dedication is there. If not, the administration may be persuaded by the number of peer institutions that have signed, or by the fact that reducing GHG emissions often means energy-use reductions and substantially lower energy costs.

It also is important to make sure that certain campus stakeholders support the effort, particularly the ones that will provide necessary data.

•**Step 2: Determine roles and responsibilities.** Is there someone on campus whose job it is to do this (like a sustainability coordinator)? If not, setting up a task force can be helpful. It also is a good idea to recruit student groups to help; they bring a lot of enthusiasm, and this can be an excellent educational opportunity.

•**Step 3: Define scope.** This often is the most difficult step. Deciding what emissions to include the first time can be tricky. The ACUPCC requires that signatories measure:

-"Scope 1" or "direct" and "fugitive" emissions, which are emissions from the

campus' fuel-burning equipment (including the campus fleet vehicles, and buses that burn gasoline and diesel fuel), and releases from equipment that contains refrigerants (HFCs), respectively.

-"Scope 2" emissions, which are the emissions attributable to the electricity that the campus purchases from the local utility.

-"Scope 3" emissions from commuting and from air travel paid for by the college (to the extent that the data are available)—in addition to air travel, this includes emissions from athletic travel; commuting to and from campus by faculty, staff and students; and business travel by campus employees. The ACUPCC also lists some optional Scope 3 emissions, such as waste disposal, purchased goods, contractors, and electricity transmission and distribution line loss.

It is important to be realistic for a first-time GHG inventory. For example, it may not make sense to include some of the Scope 3 emissions associated with the transportation of purchased goods (e.g., food or office supplies). It could be better to include those emissions in the next inventory once the kinks have been worked out of the process.

There is no one-size-fits-all solution—it all depends on the resources and goals of an individual campus. It generally is a good idea to start small and expand in subsequent years, particularly if a campus has limited resources to devote to the effort. Data gaps identified during the first inventory can be a great way to determine the path forward for the next one.

•**Step 4: Choose a method.** The most widely recognized standard for conducting a GHG emissions inventory is the Greenhouse Gas Protocol developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development. The not-for-profit organization Clean Air–Cool Planet (CA-CP) has developed a Campus Greenhouse Gas Emissions Inventory Calculator based on the protocol, which is recommended by the ACUPCC. Many prefer the user-friendly CA-CP tool; other campuses have designed their own tool based directly on the WRI protocol.

•**Step 5: Gather data, and crunch the numbers.** This step can be challenging, particularly if the necessary records are difficult to gather or interpret. It helps to have a clear picture of the recordkeeping procedures in place, but it's still easy to get lost in the data.

Most Scope 1 data usually is available from facility or physical-plant departments, which should have an inventory of fuel-burning equipment, and records of the amount of fuel used in this equipment on a yearly basis. If the quantity of fuel burned is not available, it can be estimated based on the amount of fuel purchased. Information on "fugitive" emissions should be available from the HVAC staff or contractors who service this equipment.

Scope 2 data is relatively straightforward and generally is available

There is a lot of confusion about how to determine a carbon footprint, and certain key issues must be thought through in advance, or the process can be a struggle.

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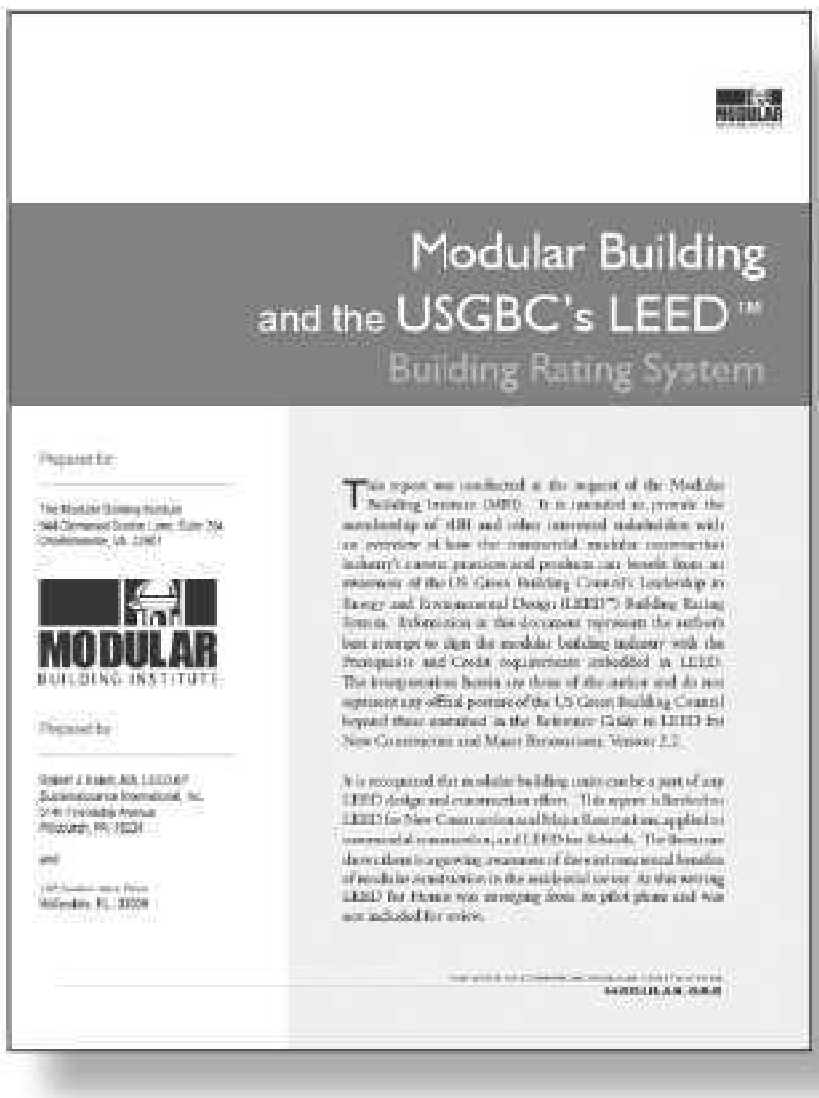

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from facility or physical plant personnel, the energy manager or purchasing department.

Some Scope 3 data, such as airtravel information, may be found in departments that authorize travel. Other data, such as miles driven to and from campus by commuting students, may not exist at all. If this is the case, you can estimate for the first inventory, and conduct a survey to gather more accurate information for future years.

Once the data are gathered, the number crunching can be simplified by using one of the GHG inventory tools available online (like CA-CP's) or working with an experienced consultant. All the emissions data is converted to tons of GHG emissions. Carbon dioxide is the main GHG of concern, and all campus emissions should be rolled up into one number: units of carbon dioxide equivalents (CO_2-e).

•**Step 6: Contextualize.** Now that the results are in, what do they mean? What are the next steps? Is this part of a larger base-lining effort or a comprehensive campus-sustainability initiative? How will the campus commit to the reduction efforts and develop the climate action plan required by the ACUPCC? Taking a critical look at the inventory results enables a campus to prioritize projects. In the end, making the transition from analysis to action is crucial to the long-term success of any carbon-reduction effort.

It is not uncommon for a school to be intimidated by the process of determining its carbon footprint, and many assume that reduction efforts will be expensive. Although there is some investment required upfront to perform the inventory, campuses often realize long-term savings from carbon-reduction initiatives, and this will become more evident as energy costs continue to rise. The business case for sustainability is getting stronger every day, and quantifying current emissions will help any school or university understand where it can generate the most savings, both in terms of money and in terms of carbon footprint.

For any campus addressing its contributions to global climate change, a GHG emissions inventory is an important first step. It enables a campus to set realistic goals, points out carbon-reduction opportunities, and provides a baseline to measure progress. A thorough inventory lays the groundwork for reductions and sustainability initiatives. ■

Deciding what emissions to include the first time can be tricky.

Mace is a project manager for Woodard & Curran, Portland, Maine, which specializes in sustainability consulting services for colleges, universities and secondary schools. She can be reached at cmace@woodardcurran.com or (800)426-4262.

WEB 101

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Measuring emissions at Fort Lewis College

Fort Lewis College in Durango, Colo., signed the Presidents Climate Commitment in 2007 and has completed a sustainability baseline audit that included a comprehensive GHG inventory.

Fort Lewis invested considerable effort in determining how to conduct the inventory. In order to comply with the requirements of the ACUPCC, Fort Lewis included emissions from fuels burned on campus or by campus-owned vehicles and equipment, emissions associated with purchased electricity, and emissions from commuting and from air travel paid for by the college. Fort Lewis discovered that the last two elements are difficult to capture, either because the data is not available or is time-consuming to analyze. This discovery is not all bad, however, because it will help improve the data-collection process for future inventories.

Once the college officials gathered the available information, they entered it into CA-CP's Campus Greenhouse Gas Emissions Inventory Calculator, which provides both specific quantities of the various types of emissions, as well as units of CO_2 equivalent, allowing an apples-to-apples comparison among different emission sources and across campuses. The results of the calculator provide a baseline against which Fort Lewis can measure the success of its carbon-reduction efforts.

Although much attention is focused on the results of the inventory, the process itself has a lot of value.

"The inventory is really an opportunity to begin a conversation with different offices and departments on campus about climate change," says Marcus Renner, Environmental Center coordinator at Fort Lewis. "This is perhaps its greatest value. The inventory allows people to understand how their day-to-day experience relates to a global problem. While this doesn't make the problem go away, it makes it seem more manageable and less overwhelming."

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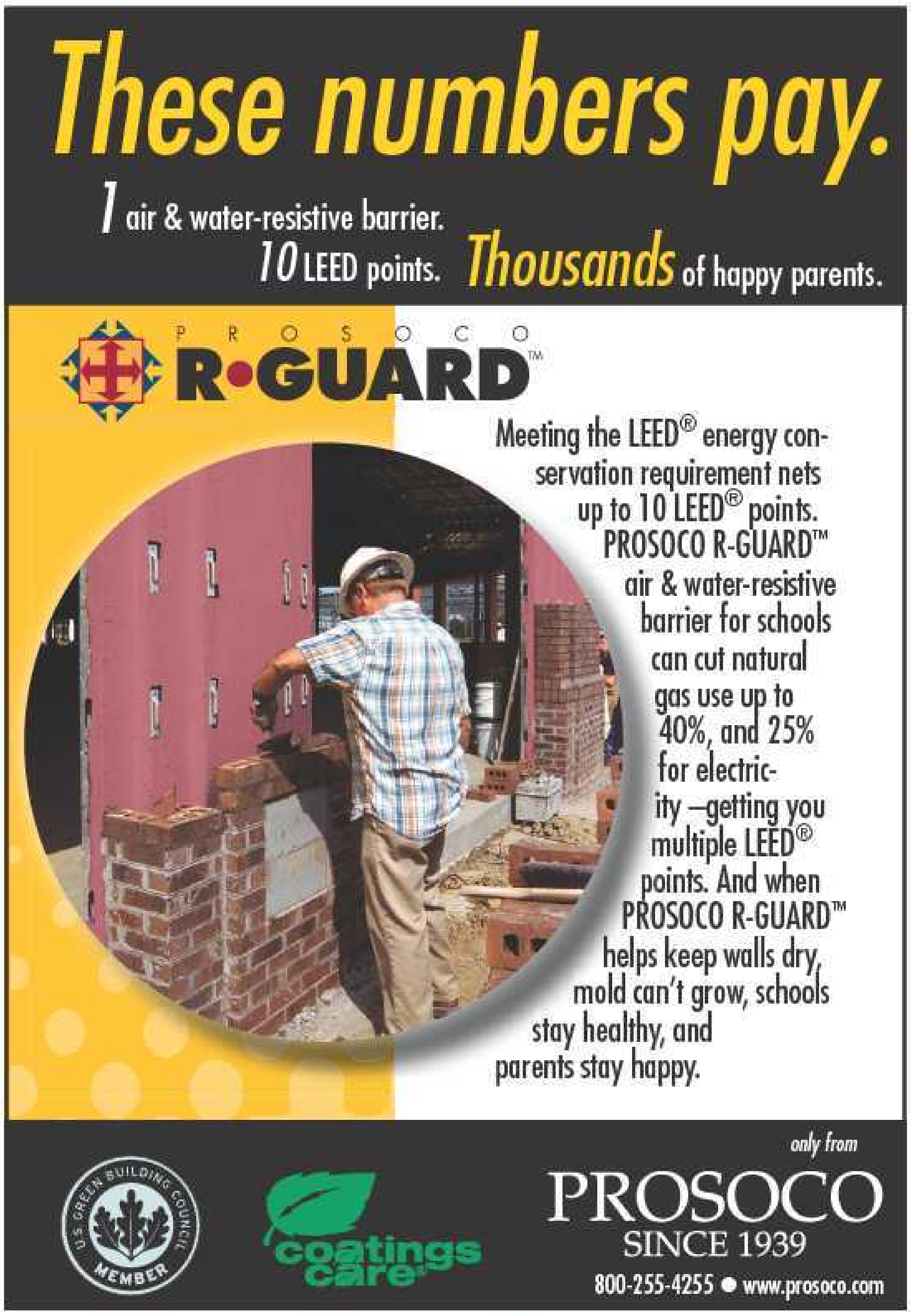

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Dayton, OH 45402
937-228-7841

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Carpet: Atlas. *Ceilings:* Armstrong. *Classroom furniture:* KI, Steelcase, Versteel. *Computer furniture:* Versteel, Steelcase. *Door hardware:* Schlage. *Doors:* Algoma Hardwoods. *Flooring:* Expanko. *Lounge furniture:* Davis, Metro, Versteel. *Office furniture:* Davis, Gunlocke. *Other:* Marlite. *Paint:* Pittsburgh Paint.

Architects West, Inc.

210 E. Lakeside Ave.
Coeur d'Alene, ID 83814
208-667-9402

Whitefish Middle School .... p. 56
No supplier information available.

Architectural Resource Team, Inc.

99 E. Virginia Ave., Suite 120
Phoenix, AZ 85004
602-307-5399

Glendale Community College, Student Union Remodel .... p. 142
Cafeteria furniture: Brayton, Versteel. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* DeRocca. *Door hardware:* Corbin Russwin, Yale. *Draperies/Blinds:* MechoShade. *HVAC control devices:* Johnson Controls. *Lounge furniture:* Dauphin, Keilhauer, Knoll. *Movable partitions/walls:* Modernfold. *Paint:* Dunn Edwards. *Skylights:* Kalwall. *Washroom fixtures:* Chicago, Sloan.

Architecture, Inc.

9681 Gladiolus Dr., Suite 205
Fort Myers, FL 33908
239-476-8888

Florida Gulf Coast University, Athletic Building .... p. 125
ADA/compliance equipment: A&J Washroom Accessories. *Brick/Masonry:* Tex Cote. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Door hardware:* Hager, Pemko, Rockwood. *Doors:* Cornell, Marshfield. *Elevators:* ThyssenKrupp. *Fire/Life-safety systems:* SimplexGrinnell, Tyco. *Flooring:* Armstrong. *HVAC control devices:* Johnson Controls. *HVAC units:* Carrier, York. *Laundry equipment:* Girbau Inc. *Locks:* Hager. *Paint:* Sherwin-Williams. *Plumbing:* Rheem, Rudd. *Washroom accessories:* A&J Washroom Accessories. *Washroom/shower partitions:* Global Steel Products. *Windows:* Viracon, YKK.

ATS&R Planners/Architects/Engineers

8501 Golden Valley Road, Suite 300
Minneapolis, MN 55427
800-545-3731

Belvidere North High School..p. 126
Brick/Masonry: Belden Brick. *Cabinets:* TMI. *Carpet:* Shaw. *Ceilings:* BPB America, USG. *Ceramic tile:* American Olean, Crossville. *Doors:* EFCO, Oshkosh. *Elevators:* Schindler. *Emergency lighting:* Columbia, Kramer Lighting, Vision. *Fire/Life-safety systems:* Edwards. *Flooring:* Azrock. *HVAC control devices:* Invensys. *HVAC units:* AERCO, Trane. *IAQ devices:* Ebtron, Innovent, Trane. *Indoor lighting:* Metalux. *Kitchen equipment:* Groen, Hobart, Victory. *Lockers:* Penco. *Markerboards:* Polyvision. *Movable partitions/walls:* Modernfold. *Paint:* Sherwin-Williams. *Physical-education flooring:* Aacer. *Windows:* EFCO.

Sunrise River Elementary School.. p. 78
Athletic equipment: Porter Athletic Equipment. *Brick/Masonry:* Premiere Block, Sioux City Brick. *Cabinets:* TMI. *Cafeteria furniture:* SICO. *Carpet:* Lees. *Ceilings:* USG. *Ceramic tile:* Dal-Tile. *Classroom furniture:* KI. *Clocks/Time management:* SimplexGrinnell. *Communications systems:* Mitel. *Computer furniture:* KI. *Computers:* Dell. *Door hardware:* Ives, LCN Closers, Von Duprin. *Doors:* Crawford, Lookson, Marshfield. *Elevators:* Schindler. *Fire/Life-safety systems:* Edwards. *Flooring:* Johnsonite, Mannington. *HVAC control devices:* American Auto-Matrix. *HVAC units:* Cleaver, Trane. *IAQ devices:* Ebtron, Trane. *Indoor lighting:* Lithonia Lighting. *Insulation:* Dryvit, Owens Corning. *Kitchen equipment:* Avtec, InterMetro Industries. *Library/media center furniture:* Minncor. *Lockers:* Penco. *Locks:* Schlage. *Markerboards:* Alliance. *Movable partitions/walls:* Hufcor. *Multipurpose-areas furniture:* KI. *Office furniture:* Allsteel, Sit-On-It. *Paint:* Pittsburgh Paint, Sherwin-Williams. *Plumbing:* Chicago Faucet, Elkay, Sloan Valve. *Roofing:* Firestone. *Signage:* ASI Modulex. *Washroom accessories:* Bradley. *Washroom/shower partitions:* Santana.

BBS Architects & Engineer, PC

244 E. Main St.
Patchogue, NY 11772
631-475-0349

***Cherry Lane Elementary School...p. 29**
Brick/Masonry: Consolidated Brick. *Cabinets:* Brodart. *Carpet:* Bentley Prince Street. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile, Wausau. *Computer furniture:* Brodart. *Door hardware:* Schlage, Von Duprin. *Doors:* Kawneer, Mohawk. *Draperies/Blinds:* Draper, Levelor. *Drinking fountains:*

Elkay. *Emergency lighting:* Luxnet. *Fire/Life-safety systems:* Fire-Lite. *Flooring:* Armstrong. *HVAC control devices:* Johnson Controls. *HVAC units:* Carrier, Markel. *Indoor lighting:* Halo, Lightolier. *Insulation:* Dow. *Library/media center furniture:* Brodart, Duhnke. *Locks:* Best Access. *Other:* JL Industries, Wilsonart. *Paint:* Benjamin Moore. *Plumbing:* Wade. *Roofing:* Soprema. *Skylights:* Kalwall, Wasco. *Washroom accessories:* Bradley. *Washroom fixtures:* Crane Plastics. *Windows:* St. Cloud Window. *Wire management:* Panduit.

Hampton Bays Middle School p. 68
Athletic equipment: Porter. *Bleachers/Grandstands:* Hussey Seating. *Card systems:* Von Duprin. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Classroom furniture:* Columbia Lighting. *Clocks/Time management:* Primex Wireless. *Communications systems:* Tyco. *Doors:* Kawneer, VT Industries. *Drinking fountains:* Elkay. *Emergency lighting:* H.E. Williams. *Fire/Life-safety systems:* Notifier. *Flooring:* Forbo, Gerflor. *Hand-drying equipment:* Excel. *HVAC control devices:* Johnson Controls. *HVAC units:* Annex Air, Carrier. *Indoor lighting:* H.E. Williams. *Insulation:* Dow. *Kitchen equipment:* Advance Tabco, Thermaduke. *Library/media center furniture:* Brodart. *Markerboards:* AARCO. *Movable partitions/walls:* Panelfold. *Office furniture:* Global Furniture, HON. *Paint:* Benjamin Moore. *Physical-education flooring:* Taraflex. *Roofing:* Johns Manville. *Science furniture:* Sheldon. *Scoreboards/Clocks:* Fair Play. *Skylights:* Kalwall. *Washroom accessories:* Bradley. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Comtec. *Windows:* Pella. *Wire management:* Panduit.

Westhampton Beach High School, Performing Arts Center ....p. 57
Auditorium/Assembly furniture: Irwin Seating. *Brick/Masonry:* Redland Brick. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Chalkboards:* Claridge. *Clocks/Time management, Communications systems:* Bogen. *Door hardware:* Sargent. *Doors:* VT Industries. *Emergency lighting:* Cooper Lighting. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Mannington. *HVAC units:* McQuay. *Indoor lighting:* Cooper Lighting. *Lockers:* Republic. *Markerboards:* Claridge. *Paint:* Benjamin Moore, Scuffmaster. *Plumbing:* American Standard. *Roofing:* Johns Manville. *Science furniture:* Sheldon. *Washroom accessories:* Bobrick. *Windows:* Architectural Window.

BCDM, Inc.

1015 N. 98th St., Suite 300
Omaha, NE 68114
402-384-6428

***General Omar Bradley Elementary School, Thomas J. Devlin Educational Theater and Music/Science Addition .... p. 36**
Brick/Masonry: Bayer Stone, Sioux City Brick. *Cabinets:* Sheldon. *Carpet:* Collins & Aikman, Interface. *Ceilings:* Celotex, Chicago Metallic. *Ceramic tile:* American Olean, Italgranti. *Communications systems:* Rauland Borg. *Door hardware:* Corbin Russwin, Hager, McKinney, Norton, Pemko, Precision, Rixon, Rockwood. *Doors:* Curries, Total Door, VT Industries. *Drinking fountains:* Elkay. *Fire/Life-safety systems:* Siemens. *Flooring:* Armstrong, Forbo, Mannington. *Hand-drying equipment:* World Dryer. *HVAC units:* AAON. *Indoor lighting:* Bronzelite, Dual, Gardco, Halo, Kim, Prescolite, Stonco, Williams. *Insulation:* Atlas. *Markerboards:* Claridge. *Paint:* ICI. *Plumbing:* Crane, Zurn. *Roofing:* Carlisle SynTec. *Science furniture:* Sheldon. *Skylights:* Kalwall. *Washroom accessories:* ASI. *Washroom fixtures:* Crane, Intersan. *Windows:* EFCO, Manko, Pella.

BE&K Building Group, LLC

201 E. McBee Ave., Suite 400
Greenville, SC 29601
864-250-5056

J.L. Mann High Academy .... p. 79
ADA/compliance equipment: Horton Automatics. *Athletic equipment:* American Athletic. *Auditorium/Assembly furniture:* Track Seating. *Bleachers/Grandstands:* Irwin Seating. *Brick/Masonry:* Endicott Clay Products. *Cabinets:* Stevens Industries. *Carpet:* J&J Commercial Carpet. *Ceilings:* Armstrong. *Communications systems:* GE Security, Telecor. *Door hardware:* Sargent. *Doors:* Marshfield. *Draperies/Blinds:* Bali, Springs Window Fashions. *Drinking fountains:* Acorn Aqua. *Elevators:* Otis. *Emergency lighting:* Day-Brite Lighting. *Fire/Life-safety systems:* Fire-Lite Alarms. *Flooring:* Armstrong. *Hand-drying equipment:* American Dryer. *HVAC control devices, units:* Trane. *Indoor lighting:* Day-Brite Lighting. *Insulation:* Owens Corning. *Kitchen equipment:* Bally, Frymaster, Market Forge. *Laundry equipment:* Belco. *Library/media center furniture:* TESCO Industries. *Lockers:* Penco Products. *Locks:* Sargent. *Markerboards:* Newline Products. *Messageboards:* Polyvision. *Movable partitions/walls:* Moderco. *Paint:* Sherwin-Williams. *Physical-education flooring:* Action Floor Systems. *Plumbing:* Ferguson. *Roofing:* Firestone Building Products. *Science furniture:* Sheldon Lab Systems. *Scoreboards/Clocks:* Daktronics. *Security systems:* ADEMCO, GE Security. *Washroom accessories:* Bobrick. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Columbia Partitions. *Windows:* EFCO.

Bond Wolfe Architects

200 S. Bemiston Ave., Suite 100
St. Louis, MO 63105
314-863-4994

Hazelwood Southeast Middle School ....p. 116
Athletic equipment: Aallo. *Brick/Masonry:* Interstate Brick. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Door hardware:* Schlage. *Draperies/Blinds:* Draper. *Drinking fountains:* Halsey Taylor. *Elevators:* Otis. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Azrock. *Hand-drying equipment:* Bobrick. *HVAC control devices, units:* Imeco. *Indoor lighting:* Day Brite, Focal Point. *Insulation:* Certainteed. *Lockers:* Penco Products. *Locks:* Best Access. *Markerboards:* Newline. *Movable partitions/walls:* Kwik Wall. *Paint:* Sherwin-Williams. *Physical-education flooring:* Taraflex. *Roofing:* Versico. *Washroom accessories:* Bobrick. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Comtec.

Brave / Architecture

4617 Montrose Blvd., Suite C230
Houston, TX 77006
713-524-5858

University of Houston, School of Communication, Computer Lab Renovation .... p. 99
Carpet: Lees. *Ceilings:* Armstrong, USG. *Classroom furniture:* Izzy

Design, Maxwell Chair, Teknion. *Door hardware:* Sargent. *Doors:* Vistawall. *Emergency lighting:* Lithonia Lighting. *Flooring:* Armstrong. *HVAC units:* Liebert. *Indoor lighting:* Lightolier, Lithonia Lighting. *Locks:* Sargent. *Lounge furniture:* Gunlocke. *Other:* Teknion. *Paint:* Benjamin Moore. *Wire management:* Wiremold.

Bruner/Cott & Associates, Inc.

130 Prospect St.
Cambridge, MA 02139
617-492-8400

Vanderbilt University, Commons Center ....p. 143
Auditorium/Assembly furniture: Vecta. *Cafeteria furniture:* Lombard Chair Co. *Card systems:* Honeywell. *Carpet:* Atlas, Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Crossville, Flor Gres, Veneto. *Computers:* Apple. *Door hardware:* Precision, Rixson, Rockwood, Yale. *Doors:* Algoma Hardwoods. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Halsey Taylor. *Elevators:* Kone. *Emergency lighting:* Alko. *Flooring:* Crossville, Dal-Tile, Roppe. *Hand-drying equipment:* Zlerator. *HVAC control devices:* Honeywell. *HVAC units:* Trane. *Insulation:* Carlisle SynTec. *Kitchen equipment:* Baring Industries. *Lockers:* Lyon Products. *Locks:* Yale. *Lounge furniture:* Allemuir, Brayton, Sandback. *Multipurpose-areas furniture:* Steelcase. *Office furniture:* Steelcase, Turnstone, Vecta. *Other:* Artemis, Tremco. *Paint:* Pittsburgh Paint. *Roofing:* Carlisle SynTec, Sure Weld. *Skylights:* Wasco. *Washroom accessories:* Sloan Valve. *Washroom fixtures:* Kohler. *Washroom/shower partitions:* Santana. *Waste receptacles:* Landscape Forms. *Windows:* U.S. Aluminum.

Campus Apartments, Inc.

4043 Walnut St.
Philadelphia, PA 19104
215-243-7000

Franklin & Marshall College, Campus Crossings-College Row .... p. 135
Brick/Masonry: Glen-Gery. *Cabinets:* Armstrong. *Carpet:* Shaw. *Ceilings:* Armstrong. *Flooring:* Armstrong. *HVAC control devices, units, IAQ devices:* Lennox. *Kitchen equipment:* GE. *Movable partitions/walls:* USG. *Other:* YKK. *Roofing:* Firestone. *Windows:* Wausau.

Cannon Moss Brygger & Associates

401 Douglas St., Suite 500
Sioux City, IA 51101
712-274-2933

Northwestern College, Rowenhorst Student Center .... p. 144
Cabinets: Nevamar. *Carpet:* Lees, Shaw. *Chalkboards:* Polyvision. *Classroom furniture:* Royal Desks. *Flooring:* Mannington. *Indoor lighting:* Tech Lighting. *Lounge furniture:* Haworth, Segis Gamma Lounge. *Markerboards:* Polyvision. *Multipurpose-areas furniture:* X99. *Office furniture:* Haworth, Improv, Tempo, Zody. *Paint:* Diamond Vogel. *Signage:* ASI.

Clark Nexsen Architecture & Engineering

1523 Elizabeth Ave., Suite 300
Charlotte, NC 28204
704-377-8800

Duke University, Adaptive Reuse of Old Art Museum .... p. 100
Cabinets: Nevamar. *Carpet:* Mekki Modular. *Ceilings:* Chicago Metallic. *Door hardware:* Stanley. *Doors:* CECO, Eggers. *Draperies/Blinds:* Hunter Douglas. *Drinking fountains:* Elkay. *Elevators:* Otis. *Fire/Life-safety systems:* Tyco. *Flooring:* Crossville. *Hand-drying equipment:* Bobrick. *HVAC control devices:* Siemens. *HVAC units:* McQuay. *IAQ devices:* Siemens. *Indoor lighting:* Birdwood, Corelite, Gotham, Insight, Lithonia Lighting. *Insulation:* Dow Chemical. *Locks:* Stanley, Yale. *Other:* Draper, Polyvision. *Paint:* ICI Paints. *Plumbing:* Elkay, Kohler. *Skylights:* PPG Industries. *Washroom accessories, fixtures:* Bobrick. *Windows:* TRACO.

University of North Carolina Wilmington, Seahawk Village and Seahawk Landing Student Housing Complexes .... p. 136
ADA/compliance equipment: American Specialties, Church, Enex. *Brick/Masonry:* Holcim, Wirebound. *Cabinets:* JL Industries, Neocase. *Ceramic tile:* Dal-Tile, Latricrete. *Communications systems:* AMP Interconnect, Corning. *Doors:* Multin Frames. *Draperies/Blinds:* CACO. *Elevators:* Schindler. *Emergency lighting:* GE, JJI Lighting, Valmont Lexington. *Fire/Life-safety systems:* Honeywell. *Flooring:* Armstrong. *HVAC control devices:* Nailor, Totaline. *HVAC units:* Carrier, First Operations, Modine. *IAQ devices:* Revers-O-Matic, Whirlpool. *Indoor lighting:* Hubbell, Kenall, Progress, Sea Gull. *Insulation:* Batt, Dow Chemical. *Kitchen equipment, Laundry equipment:* Kenmore. *Paint:* ICI Paints. *Plumbing:* Rundle. *Security systems:* Secura Screen. *Washroom accessories:* Bootz Industries. *Washroom fixtures:* American Standard, B&K Faucets. *Washroom/shower partitions:* Bradley.

Cogdell & Mendrala Architects, PC

517 E. Congress St.
Savannah, GA 31401
912-234-6318

Savannah Christian Preparatory School, Eckburg Center ....p. 127
Bleachers/Grandstands: Hussey Seating. *Brick/Masonry:* Boral Brick, Pittsburgh Corning. *Carpet:* Patcraft. *Ceilings:* Armstrong, Ceilings Plus. *Ceramic tile:* Dal-Tile. *Door hardware:* Sargent. *Doors:* Advanced Door Systems, Marshfield. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Elkay. *Emergency lighting:* Cooper Lighting. *Fire/Life-safety systems:* Champion Fire Protection. *Hand-drying equipment:* American Specialties. *HVAC control devices:* Johnson Controls. *HVAC units:* Carrier. *IAQ devices:* Johnson Controls. *Indoor lighting:* Cooper Lighting. *Insulation:* Owens Corning. *Lockers:* Penco. *Messageboards:* Claridge. *Other:* Ballew, Conwed, Marlite. *Paint:* Benjamin Moore, Zolatone. *Physical-education flooring:* Robbins. *Plumbing:* Crane. *Signage:* ASI Sign Systems. *Washroom accessories:* American Specialties. *Washroom fixtures:* Zurn. *Washroom/shower partitions:* Comtec, Santana. *Waste receptacles:* American Specialties. *Windows:* YKK. *Wire management:* B-Line.

The Collaborative Inc.

500 Madison Ave.
Toledo, OH 43604
419-242-7405

Wright State University, Student Union/Recreation Center Renovation .... p. 145
Flooring: Dal-Tile, Keystones.

cox graae + spack Architects

2909 M St., N.W.
Washington, DC 20016
202-965-7070

The Potomac School, Upper School Building.................................. p. 80
Carpet: Collins & Aikman. *Ceilings:* USG. *Ceramic tile:* American Olean. *Door hardware:* Schlage. *Doors:* Marshfield. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Haws. *Elevators:* KONE. *Flooring:* Armstrong. *HVAC units:* Trane. *Indoor lighting:* Ledalite, Pinnacle. *Insulation:* Owens Corning. *Paint:* Benjamin Moore. *Plumbing:* American Standard. *Roofing:* Hydrotech, Pac Clad. *Washroom accessories:* Bobrick. *Windows:* Kawneer.

Cubellis

1800 Eller Drive, Suite 500
Fort Lauderdale, FL 33316
954-961-6806

Berkshire Elementary School p. 117
Cafeteria furniture: Virco. *Carpet:* Patcraft. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Classroom furniture:* Steelcase, Virco. *Computer furniture:* Virco. *Computers:* Dell. *Door hardware:* Schlage. *Doors:* Steelcraft. *Draperies/Blinds:* Draper. *Elevators:* ThyssenKrupp. *Emergency lighting:* Columbia Lighting. *Fire/Life-safety systems:* Tyco. *Flooring:* Armstrong. *HVAC units:* Carrier. *Indoor lighting:* Columbia Lighting, Lite Control. *Library/media center furniture:* Brodart. *Lockers:* Penco Products. *Lounge furniture:* Steelcase, Vecta. *Markerboards, messageboards:* Polyvision. *Office furniture:* Gunlocke, Steelcase. *Paint:* Benjamin Moore. *Playground equipment:* Wow Playgrounds. *Plumbing:* American Standard. *Roofing:* Monier. *Washroom accessories:* Gamco. *Washroom fixtures:* American Standard. *Waste receptacles:* Wow Playgrounds. *Windows:* Sol-A-Trol.

DCM Architecture & Engineering LLC

57 Kresson Road
Cherry Hill, NJ 08034
856-795-2224

John Walker Middle School .. p. 118
Brick/Masonry: Clayton. *Cabinets:* Nickerson. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Door hardware:* Halpern. *Doors:* Galaxy, Halpern. *Flooring:* Armstrong. *HVAC control devices:* Honeywell. *HVAC units:* Petra, York. *IAQ devices:* Semco. *Indoor lighting:* Day-O-Lite. *Markerboards:* Polyvision. *Paint:* Sherwin-Williams. *Plumbing:* Zurn. *Signage:* Designer Systems. *Windows:* Thermal Industries.

Design Collaborative, Inc.

200 E. Main St., Suite 600
Fort Wayne, IN 46802
219-422-4241

Trine University, University Center and Center for Technology and Online Resources .... p. 146
Brick/Masonry: Brixment, Masolite. *Carpet:* Shaw. *Ceilings:* USG. *Ceramic tile:* Dal-Tile. *Communications systems:* Siemens. *Door hardware:* Adams Rite, Hager, National Guard, Norton. *Doors:* Ceco, Ellason, Mohawk, Woodtech. *Drinking fountains:* Elkay. *Elevators:* National Wheel-O-Vator, Schindler. *Emergency lighting:* McPhilben. *Fire/Life-safety systems:* B-Line, Bull Moose, Code Blue, Kennedy, Larsen's, Nibco, Potter Roemer, Proflo, Siemens, Victaulic, Viking, Wilkins. *Flooring:* Armstrong. *Hand-drying equipment:* Excel Dryer. *HVAC control devices:* Andover Controls. *HVAC units:* Trane. *Indoor lighting:* Capri Lighting, Day-Brite Lighting, Delux, Emco Lighting, G-Lighting, Insight, Ledalite, Liton, Omega Lighting. *Insulation:* Dow, Owens Corning. *Kitchen equipment:* Alto Shaam, Baxter Mfg., Brass Smith, Delfield, Eagle Group, Follet, Great Lakes Stainless, Hobart, Holsinger Mfg., Hoshizaki North Central, Kolpak, Manitowac Foodservice, Maytag, T&S Brass, Tyler Refrigeration, Vulcan. *Locks:* Dorma. *Paint:* Porter Paints. *Plumbing:* Tyler Pipe, U.S. Pipe. *Roofing:* Dow, Firestone, Johns Manville, Sno-Gem. *Washroom accessories:* American Specialties. *Washroom/shower partitions:* Comtec. *Windows:* Brass-Smith, Inc., Eagle, U.S. Aluminum.

DLA Architects, Ltd.

15 Salt Creek Lane, Suite 400
Hinsdale, IL 60521
630-230-0420

Shepard High School, Cafeteria Expansion ....p. 61
No supplier information available.

DLR Group

901 Fifth Ave., #700
Seattle, WA 98164
206-461-6000

Marysville Getchell High School.......................................p. 81
No supplier information available.

Dodge Chamberlin Luzine Weber Associates Architects

73 Troy Road
East Greenbush, NY 12061
518-479-4000

Greater Amsterdam School District, Bert DeRose Theater .... p. 58
Carpet: Collins & Aikman. *Ceilings:* Armstrong. *Clocks/Time management:* Sapling. *Door hardware:* DCI, Dorma, Pemko, Stanley. *Doors:* Vistawall, VT Industries. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Mannington. *HVAC control devices:* Hawkeye, Mamac, Siemens. *HVAC units:* Petra. *IAQ devices:* Hawkeye, Mamac, Siemens. *Indoor lighting:* Leviton, Lithonia. *Insulation:* Owens Corning. *Other:* Draper, Kinetics Noise Control, Tremco, Wenger. *Paint:* Sherwin-Williams. *Security systems:* Bosch Security Systems. *Signage:* Mohawk Sign Systems. *Wire management:* Wiremold.

Don Dommer Associates

1144 65th St., Suite G
Oakland, CA 94608
510-655-7793

Merritt College, Student Activities Center ....p. 147
ADA/compliance equipment: National Wheel-O-Vator. *Cafeteria furniture:* Plymold. *Card systems:* Johnson Controls. *Carpet:* Interface. *Ceilings:* Armstrong. *Ceramic tile:* Terra Green Ceramics. *Clocks/Time management:* SimplexGrinnell. *Communication systems:* Berk-Tek, Ortronics. *Door hardware:* Hager, Ingersoll Rand, Ives, LCN Closers. *Doors:* Graham, Security Metal Doors. *Draperies/Blinds:* MechoShade. *Elevators:* ThyssenKrupp. *Emergency lighting:* McPhilben. *Fire/Life-safety systems:* Simplex. *Flooring:* Forbo. *HVAC control devices:* Microcontrol Systems. *HVAC units:* AAON, Carrier. *Indoor lighting:* Architektur, Beta-Calgo, Finelite, Focal Point, Lithonia Lighting, Prescolite,

Prudential, Rebelle. *Kitchen equipment:* Gemini. *Lockers:* ASI. *Locks:* Best Access Systems, Schlage. *Markerboards:* Polyvision. *Messageboards:* Adaptive Microsystems. *Other:* Da-Lite, Tate Access Flooring. *Paint:* Kelly Moore. *Security systems:* Johnson Controls. *Signage:* Signature Sign Systems. *Skylights:* Kalwall. *Washroom accessories:* Bobrick. *Washroom fixtures:* Kohler, Toto, Zurn. *Washroom/shower partitions:* Santana. *Windows:* Vistawall. *Wire management:* Chatsworth.

Dougherty + Dougherty Architects, LLP

3194 D Airport Loop Drive
Costa Mesa, CA 92626
714-427-0277

Beverly Vista Elementary School, Building B, Auditorium Preservation and Expansion p. 101
ADA/compliance equipment: Lift-U. *Auditorium/Assembly furniture:* Irwin Seating. *Cabinets:* Wilsonart. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Classroom furniture:* Wenger. *Door hardware:* Schlage, Von Duprin. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Haws. *Elevators:* ThyssenKrupp. *Emergency lighting:* Concealite, McPhilben. *Fire/Life-safety systems:* Total Door. *Flooring:* Armstrong. *HVAC control devices:* Honeywell. *HVAC units:* Carrier. *Indoor lighting:* Gardco, Louis Poulsen, Prudential. *Insulation:* Johns Manville. *Locks:* Schlage. *Markerboards:* Claridge. *Paint:* Dunn Edwards. *Plumbing:* American Standard. *Roofing:* Tremco. *Signage:* Vomar. *Washroom accessories:* Bobrick. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Comtec. *Windows:* Pella, U.S. Aluminum.

DRS Architects

One Gateway Center, 17th Floor
Pittsburgh, PA 15222
412-391-4850

Duquesne University, A.J. Palumbo Center Renovation .... p. 82
Carpet: Milliken. *Ceilings:* USG. *Ceramic tile:* Dal-Tile. *Door hardware:* Hager, Schlage, Von Duprin. *Doors:* Mohawk. *Draperies/Blinds:* Bali. *Elevators:* Schindler. *Flooring:* Tuflex. *HVAC control devices:* Siemens. *Indoor lighting:* Day-Brite Lighting, Ledalite. *Lockers:* Legacy. *Lounge furniture:* Berco, KI. *Markerboards, messageboards:* Polyvision. *Office furniture:* Haworth, KI. *Paint:* Sherwin-Williams. *Plumbing:* American Standard. *Washroom accessories:* Bradley. *Washroom fixtures:* American Standard, Chicago Faucet. *Washroom/shower partitions:* Santana. *Windows:* Kawneer.

Earl Swensson Associates, Inc.

2100 West End Ave., Suite 1200
Nashville, TN 37203
615-329-9445

***Belmont University, Bill and Carole Troutt Theater .... p. 18-19**
ADA/compliance equipment: Garaventa. *Carpet:* Monterey. *Ceilings:* Armstrong. *Ceramic tile:* American Olean, Crossville. *Door hardware:* Dorma, Hagar. *Doors:* Mohawk. *Draperies/Blinds:* MechoShade. *Elevators:* ThyssenKrupp. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Crossville, Nora Rubber Flooring. *HVAC units:* Trane. *Indoor lighting:* Davis, Muller Lighting. *Insulation:* Owens Corning. *Locks:* Best Access. *Other:* Track Seating. *Paint:* Porter Paints. *Plumbing:* Kohler. *Roofing:* Garland. *Washroom accessories:* GAMCO. *Windows:* Marvin.

Ehresman Associates, Inc.

803 W. Big Beaver Road, Suite 350
Troy, MI 48084
248-244-9710

Grosse Pointe North High School, Science Laboratory and Classroom Addition .... p. 110
Ceilings: Celotex. *Ceramic tile:* American Olean. *Door hardware:* Best Access. *Doors:* Marshfield. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Emergency lighting:* Lithonia Lighting. *Fire/Life-safety systems:* Victaulic, Viking. *Flooring:* Armstrong. *Hand-drying equipment:* Bobrick. *HVAC control devices:* Johnson Controls. *HVAC units:* McQuay. *Indoor lighting:* Finelite, Lithonia Lighting. *Insulation:* Thermafiber. *Locks:* Best. *Paint:* Sherwin- Williams. *Roofing:* Firestone. *Science furniture:* Fisher-Hamilton. *Washroom accessories:* Bobrick. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Sanymetal. *Windows:* EFCO, Kawneer. *Wire management:* Belkin.

EI Associates

8 Ridgedale Ave.
Cedar Knolls, NJ 07927
973-775-7777

Metuchen High School .... p. 104
Athletic equipment: Jaypro. *Auditorium/Assembly furniture:* Hussey Seating. *Bleachers/Grandstands:* Dant Clayton, Hussey Seating. *Brick/Masonry:* Watson Brick. *Cabinets:* Stevens Industries. *Card systems:* Bosch. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Clocks/Time management:* Sapling. *Communications systems:* Bogan. *Door hardware:* Schlage, Von Duprin. *Doors:* Acme, Special-Lite. *Draperies/Blinds:* Springs Window Fashions. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Emergency lighting:* Lightolier. *Flooring:* Azrock. *Hand-drying equipment:* American Specialties. *HVAC control devices:* Jersey Slate Controls. *HVAC units:* Circulaire, Hunt Air, McQuay. *Indoor lighting:* Lightolier. *Insulation:* Owens Corning. *Kitchen equipment:* GE. *Lockers:* List Industries. *Locks:* Schlage, Von Duprin. *Markerboards:* Polyvision. *Movable partitions/walls:* Jaypro. *Paint:* Sherwin-Williams. *Physical-education flooring:* Robbins. *Plumbing:* American Standard, Zurn. *Roofing:* Johns Manville. *Scoreboards/Clocks:* Fairplay. *Security systems:* Bosch. *Signage:* Signs, Inc. *Skylights:* Kalwall. *Washroom accessories, fixtures:* American Specialties. *Washroom/shower partitions:* Accurate Partitions.

French Associates, Inc. (with Perkins + Will)

1600 Parkdale Road
Rochester, MI 48307
248-656-1377

Parker High School .... p. 83
Auditorium/Assembly furniture: Wenger. *Brick/Masonry:* Belden Brick. *Carpet:* Interface. *Ceilings:* Rulon Company. *Ceramic tile:* Dal-Tile. *Door hardware:* Ingersoll Rand. *Indoor lighting:* Superior. *Waste receptacles:* World Wide Waste. *Windows:* Omega Glass Company.

The FWA Group, Architects

500 East Blvd.
Charlotte, NC 28203
704-332-7004

Winthrop University, The Lois Rhame West Health, Physical Education & Wellness Center p. 128
Athletic equipment: Entre Prises, FreeMotion Fitness, Magnum, Paddock, Precor. *Draperies/Blinds:* Draper. *Flooring:* Duraflex. *Indoor lighting:* Abolite, Insight. *Laundry equipment:* Huebsch. *Lockers:* Comtec. *Physical-education flooring:* Robbins. *Scoreboards/Clocks:* Daktronics. *Skylights:* Kalwall. *Washroom/shower partitions:* Comtec.

Gensler

Rockefeller Center
1230 Avenue of the Americas
New York, NY 10020
212-492-1400

New York University, Steinhardt School of Culture, Education, and Human Development, Department of Speech-Language Pathology and Audiology .... p. 102-103
ADA/compliance equipment: Hi-Teck Data Floors Inc. *Cafeteria furniture:* Brayton. *Carpet:* Shaw. *Ceilings:* Armstrong. *Childcare furniture:* Kartell. *Classroom furniture:* Brayton. *Computers:* Dell. *Door hardware:* Corbin Russwin, Rixson. *Doors:* Acme Steel Doors. *Draperies/Blinds:* Draper. *Emergency lighting:* Se'Lux, Slim Lite. *Hand-drying equipment:* Bobrick. *HVAC units:* Carrier. *Indoor lighting:* Se'Lux, Slim Lite. *Kitchen equipment:* Frigidaire, Hoshizaki, Summit. *Lockers:* Lyon Lockers. *Lounge furniture:* Brayton. *Markerboards:* Walltalkers. *Office furniture:* Steelcase. *Paint:* Benjamin Moore. *Science furniture:* Brayton. *Washroom accessories:* Bobrick. *Washroom fixtures:* Sloan Valve. *Washroom/shower partitions:* Metpar Corp.

Gilbert Architects Inc.

626 N. Charlotte St.
Lancaster, PA 17603
717-219-1077

B. Reed Henderson High School, Media Center .... p. 105
Card systems: Northern Computers. *Carpet:* Lees. *Ceilings:* Armstrong. *Clocks/Time management:* Dukane. *Emergency lighting:* Portfolio. *Fire/Life-safety systems:* Siemens Fire Safety. *Indoor lighting:* DM Lighting, Forum, Metalux, Portfolio. *Library/media center furniture:* Warden. *Security systems:* Ademco.

Gould Evans

7501 W. 110th St.
Overland Park, KS 66210
816-931-6655

Johnson County Community College, Regnier Center for Business and Technology .... p. 84
No supplier information available.

Griskelis Young Harrell

400 N. Michigan Ave., Suite 500
Chicago, IL 60611
312-645-0011

Northwestern University School of Law, SMART Classrooms Renovation .... p. 69
Carpet: Durkan. *Ceilings:* Armstrong. *Ceramic tile:* American Olean. *Classroom furniture:* Hayworth. *Communications systems:* Polycom, Shure. *Door hardware:* Corbin Russwin, Ives. *Doors:* Eggers. *Draperies/Blinds:* Lutron. *Drinking fountains:* Elkay. *Fire/Life-safety systems:* Tyco. *Indoor lighting:* Lightolier. *Insulation:* CertainTeed. *Locks:* Corbin Russwin. *Markerboards:* Platinum Visual System. *Other:* Maharam. *Washroom accessories:* Bobrick. *Washroom fixtures:* American Standard. *Washroom/shower partitions:* Bobrick.

Hasenstab Architects, Inc.

190 N. Union St., Suite 400
Akron, OH 44304
330-434-4464

The University of Akron, Robertson Cafe .... p. 106
Cabinets: Wilsonart. *Cafeteria furniture:* Fixtures Furniture, Shelby Williams. *Carpet:* Mannington. *Ceilings:* Armstrong. *Ceramic tile:* Crossville. *Computer furniture:* Leland. *Flooring:* Lees, Neo Floor. *Kitchen equipment:* Alto, Brass Smith, Follett, Gaylord, Kolpak, Merco, Turbo Chef. *Lounge furniture:* Fixtures Furniture, Southern Aluminum. *Washroom fixtures:* Bradley. *Windows:* Vistawall.

Hastings & Chivetta Architects, Inc.

700 Corporate Park Drive, Suite 400
St. Louis, MO 63105
314-863-5717

University of Tulsa, Case Athletic Complex.................................... p. 129
Cabinets: Lamin-Art. *Carpet:* Durkan, Interface, Karastan, Masland. *Doors:* Algoma Hardwoods. *Office furniture:* Kimball. *Other:* All Seating, Human Scale, Johnsonite, Maharam, Nevers, Tnemec. *Paint:* Pittsburgh Paint.

***University of Tulsa, Collins Hall Welcome Center ....p. 37**
Carpet: Constantine, Karastan. *Ceilings:* USG. *Draperies/Blinds:* Brentano, Levelor, Lutron. *Flooring:* Johnsonite, Kentucky Wood Floors. *Other:* Beacon Hill Fabrics, Dal-Tile, Formica, Global Granite & Marble, Kimball Office Furniture, Loop Textiles, Momentum Textiles, National Office Furniture, Pollack Textiles, Sandler Seating, Scott Group Custom Carpet. *Paint:* Pittsburgh Paint.

Holabird & Root LLC

140 S. Dearborn St., Fifth Floor
Chicago, IL 60603
312-357-1350

Dominican University, Parmer Hall .... p. 112-113
Cabinets: Securall. *Carpet:* Shaw. *Ceilings:* USG. *Ceramic tile:* Crossville, Dal-Tile. *Door hardware:* Ives, LCN Closers, Schlage, Von Duprin. *Doors:* Algoma Hardwoods. *Drinking fountains:* Halsey Taylor. *Elevators:* Otis. *Flooring:* Armstrong. *HVAC control devices:* Phoenix Controls. *HVAC units:* Tentrol. *Indoor lighting:* Alera, Chicago. *Paint:* Sherwin-Williams. *Plumbing:* American Standard, Sloan Valve. *Roofing:* Carlisle SynTec, Owens Corning. *Science furniture:* Kewaunee Scientific. *Windows:* Tubelite.

HSMM AECOM (Hayes, Seay, Mattern & Mattern, Inc.)

1315 Franklin Road
Roanoke, VA 24016
540-857-3257

The College of William and Mary, Wolf Law Library Additions and Alterations at the Marshall-Wythe School of Law ....p. 119
Cabinets: Avonite, Nevamar. *Carpet:*

Monterey. *Ceilings:* Armstrong. *Ceramic tile:* Crossville. *Door hardware:* Hager, LCN Closers, Pemko, Rixson, Von Duprin. *Doors:* Algoma Hardwoods. *Draperies/Blinds:* Bali, Draper. *Elevators:* Schindler. *Emergency lighting:* Exitronix. *Fire/Life-safety systems:* SimplexGrinnell, Tyco. *Flooring:* Armstrong. *HVAC units:* York. *Indoor lighting:* Alera, Columbia, Devine Spaulding, Edison-Price, Hubbell, Prescolite, Visa. *Insulation:* Johns Manville. *Library/media center furniture:* Worden. *Lounge furniture:* David Edward, Nemschoff. *Multipurpose-areas furniture:* Davis, MTS. *Paint:* Benjamin Moore. *Signage:* APCO. *Skylights:* Extech. *Washroom accessories:* Bobrick. *Washroom/shower partitions:* Comtec. *Windows:* Peerless.

Integrated Design Solutions, LLC

888 W. Big Beaver, Suite 200
Troy, MI 48084
248-823-2115

South Lyon East High School ... p. 85
Athletic equipment: Schelde. *Auditorium/Assembly furniture:* Hussey Seating. *Bleachers/Grandstands:* Interkal. *Brick/Masonry:* Essroc. *Cabinets:* Polyvision, Wenger. *Cafeteria furniture:* Great Lakes. *Carpet:* Dupont, Mohawk, Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Chalkboards:* Polyvision. *Childcare furniture:* Wisconsin Bench. *Classroom furniture:* Artco Bell, Markant. *Clocks/Time management:* Primex. *Communications systems:* Cisco, Dukane. *Computer furniture:* KI, Markant. *Computers:* Dell. *Door hardware:* Best Access, LCN, Precision, Ryobi, Schlage, Von Duprin. *Doors:* Marshfield, Special-Lite, Steelcraft, Tubelite. *Draperies/Blinds:* Draper. *Drinking fountains:* Elkay, Haws. *Elevators:* Schindler. *Emergency lighting:* Gotham, Lithonia. *Fire/Life-safety systems:* National Time & Signal, Nederman, Viking. *Flooring:* Armstrong. *HVAC control devices:* Siemens. *HVAC units, IAQ devices:* Greenheck, McQuay, York. *Indoor lighting:* Fine Lite. *Indoor lighting:* GE, Gotham, Graybar, Lithonia. *Insulation:* Dow, Owens Corning. *Kitchen equipment:* Great Lakes. *Library/media center furniture:* Leland, Media Technologies. *Lockers:* Lyon Lockers, Santana. *Locks:* Best Access, Schlage. *Lounge furniture:* Lowenstein. *Markerboards, messageboards:* Polyvision. *Movable partitions/walls:* Modernfold. *Multipurpose-areas furniture:* Artco Bell, Berco. *Office furniture:* Allsteel, Gunlocke, KI. *Other:* Altman, Gotham, Graybar, Lithonia, Nevamar, Pionite, Shain, Wenger, Wilsonart. *Paint:* Pratt & Lambert. *Physical-education flooring:* Robbins. *Plumbing:* Charlotte, Haws, Olsonite, Watts. *Roofing:* Carlisle SynTec. *Science furniture:* Collegedale. *Scoreboards/Clocks:* Colorado Time, Daktronics. *Security systems:* Honeywell. *Signage:* Apco. *Skylights:* Imperial Glass. *Washroom accessories:* Bradley. *Washroom fixtures:* Olsonite, Watts. *Washroom/shower partitions:* Santana. *Waste receptacles:* Rubbermaid, Tamis. *Windows:* Tubelite. *Wire management:* Humanscale.

JLP/TMP Associates, Inc.

TMP Associates, Inc.
1191 W. Square Lake Road
Bloomfield Hills, MI 48302
248-338-4561

University of Michigan, Stephen M. Ross Academic Center .... p. 148
No supplier information available.

JMA Architects

16125 LaSalle St.
South Holland, IL 60473
708-339-3900

Memorial Junior High School p. 86
No supplier information available.

Johnson and Lee Architects

828 S. Wabash Ave., Suite 210
Chicago, IL 60605
312-663-0225

Kennedy-King College .... p. 70-71
No supplier information available.

Kaatz, Binkley, Jones & Morris Architects, Inc.

1008 Charlie Daniels Parkway
Mount Juliet, TN 37122
615-754-5393

East Hickman High School ... p. 130
Athletic equipment: Jaypro. *Bleachers/Grandstands:* Interkal. *Brick/Masonry:* Taylor Brick. *Ceilings:* DuctSox. *Door hardware:* Hager, Ingersoll Rand, Sargent. *Doors:* Assa Abloy. *Indoor lighting:* Cooper Lighting. *Paint:* Porter Paints, Scuffmaster. *Roofing:* Carlisle SynTec. *Signage:* Mohawk Sign Systems. *Skylights, windows:* Kalwall.

KAI Texas

Renaissance Tower
1201 Elm St., Suite 5240
Dallas, TX 75270
214-742-0400

Larry G. Smith Elementary School.................................... p. 120
No supplier information available.

Kluger Architects, Inc.

1855 Coronado Ave.
Signal Hill, CA 90755
562-366-0456

Cathedral High School, New Science Building and Gymnasium .... p. 131
Athletic equipment: Jay Pro. *Bleachers/Grandstands:* Interkal. *Brick/Masonry:* Angelus Block. *Ceramic tile:* Dal-Tile. *Drinking fountains:* Acorn Aqua. *Flooring:* Mannington. *Movable partitions/walls:* Moderco. *Physical-education flooring:* Horner Flooring. *Scoreboards/Clocks:* Nevco. *Signage:* Ampersand. *Washroom accessories:* Bobrick. *Windows:* Pella.

K.R. Montgomery & Associates Architecture & Interior Design

1020 Jackson St.
Anderson, IN 46016
765-649-8477

Anderson University, Flagship Center ....p. 87
Auditorium/Assembly furniture: KI. *Cafeteria furniture:* Falcon, Steelcase, Vecta. *Carpet:* Lees, Mohawk Sign Systems. *Ceramic tile:* American Olean, Crossville. *Classroom furniture:* Vecta. *Draperies/Blinds:* Graber. *Flooring:* Metroflor, Parterre. *Lounge furniture:* Brayton. *Markerboards:* Polyvision. *Messageboards:* Claridge. *Office furniture:* Steelcase, Turnstone. *Paint:* Sherwin-Williams. *Signage:* ASI.

LaBella Associates, PC

300 State St., Suite 201
Rochester, NY 14624
585-454-6110

***Gates Chili High School, Science Corridor .... p. 30**
Brick/Masonry: Beavertown Block. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Clocks/Time management:* National Time & Signal. *Doors:* Marshfield. *Drinking fountains:* Acorn. *Emergency lighting:* LSI. *Fire/Life-

safety systems: FCI. *Flooring:* Dobkin Tile. *HVAC control devices:* Andover Controls. *HVAC units:* Efficient Air, Patterson Kelly, Trane. *IAQ devices:* Andover Controls. *Indoor lighting:* Kenall, LSI. *Markerboards:* Polyvision. *Plumbing:* Acorn, Chicago Faucet, Elkay, Kohler, Sloan Valve, Watts, Zurn. *Roofing:* Carlisle SynTec. *Science furniture:* Fisher Hamilton, Northern Safety, Water Saver Faucet Co. *Signage:* ASI. *Skylights:* Major Industries. *Windows:* YKK. *Wire management:* Wiremold.

Lavallee Brensinger Architects

155 Dow St., Suite 400
Manchester, NH 03101
603-622-5450

Keene State College, Pondside III Residence Hall .... p. 138-139
Brick/Masonry: Arriscraft, Clayton Block, Glen-Gery. *Card systems:* Identicard. *Carpet:* Bentley, Constantine. *Ceilings:* Hunter Douglas. *Ceramic tile:* Crossville. *Communications systems:* Belden, Blonde, General Cable, Ramtel. *Door hardware:* Schlage. *Draperies/Blinds:* Draper. *Drinking fountains:* Elkay. *Elevators:* Stanley. *Fire/Life-safety systems:* Edwards Systems Technology. *Flooring:* Johnsonite, Mannington. *Hand-drying equipment:* Bradley. *HVAC control devices:* Honeywell. *HVAC units:* Enviro-tec, McQuay, Sanyo. *Indoor lighting:* Alkco, Bodine, Cooper Lighting, Elliptipar, Hadco, Kenall, Metalux, Neo-Ray, Shaper. *Kitchen equipment:* GE. *Locks:* Schlage. *Paint:* Sherwin-Williams. *Plumbing:* American Standard, Elkay, Fiat, Symmons. *Roofing:* Firestone, Peterson Aluminum. *Security systems:* Edwards Systems Technology. *Signage:* Mohawk. *Skylights:* Wasco. *Washroom accessories:* Bobrick, Bradley, Kelly-Clark. *Washroom fixtures:* American Standard, Fiat, Mansfield, Sloan Valve, Symmons. *Windows:* Kawneer.

Leo A Daly

8600 Indian Hills Drive
Omaha, NE 68114
402-391-8111

Roberts Wesleyan College, Golisano Library .... p. 121
ADA/compliance equipment: Otis. *Cafeteria furniture:* Herman Miller. *Card systems:* SimplexGrinnell. *Carpet:* Blueridge Commercial Carpet, Durkan, Mohawk. *Ceilings:* Armstrong. *Classroom furniture:* Allsteel. *Clocks/Time management:* SimplexGrinnell. *Communications systems:* SimplexGrinnell. *Computer furniture:* Allsteel. *Drinking fountains:* Elkay. *Elevators:* Otis. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Interface, Pawling. *Hand-drying equipment:* Sloan Valve. *HVAC control devices:* Day Automation Systems. *HVAC units:* McQuay, Trane. *IAQ devices:* Day Automation Systems. *Indoor lighting:* Elite, Gardco, Gotham, Lightolier, Lithonia. *Insulation:* Certainteed. *Library/media center furniture:* Agati, Cabot Wrenn, Herman Miller. *Locks:* SimplexGrinnell. *Lounge furniture:* Bernhardt, Krug, Martin Brattrud. *Multipurpose-areas furniture:* Agati. *Office furniture:* Allsteel. *Paint:* Sherwin-Williams. *Plumbing:* Landry. *Roofing:* Zurn. *Security systems:* SimplexGrinnell. *Washroom accessories:* GreenGuard Formica. *Washroom fixtures:* American Standard, Kohler, Sloan Valve. *Windows:* EFCO.

Lerner | Ladds + Bartels, Inc.

236 Hope St.
Providence, RI 02906
401-421-7715

Johnson & Wales University, Xavier Auditorium .... p. 59
No supplier information available.

University of Rhode Island, Zeta Beta Tau Fraternity House .....p. 137
No supplier information available.

Macrae-Gibson Architects

450 Seventh Ave.
New York, NY 10123
212-294-2940

***PS 70 X Pool .... p. 42**
Ceramic tile: Dal-Tile. *Indoor lighting:* Winona. *Paint:* Benjamin Moore. *Physical-education flooring:* Robbins Sports Surfaces. *Roofing:* Kemco. *Skylights:* Kalwall.

Magnusson Architecture and Planning, PC

853 Broadway, Suite 800
New York, NY 10003
212-253-7820

***The Bronx Early Learning Center.................................. p. 16-17**
Athletic equipment: Innovative Athletics. *Ceramic tile:* Dal-Tile. *Childcare furniture:* Kaplan. *Classroom furniture:* Global Furniture, Kaplan. *Emergency lighting:* Cooper Lighting. *Flooring:* Forbo. *Indoor lighting:* Cooper Lighting. *Office furniture:* Global Furniture. *Paint:* Benjamin Moore. *Physical-education flooring:* Forbo. *Playground equipment:* Unity Creation. *Security systems:* Cornell.

MDS/Miller Dyer Spears Inc.

99 Chauncy St.
Boston, MA 02111
617-338-5350

Berklee College of Music, Cafe 939.................................... p. 150
No supplier information available.

Harvard University, Cambridge Queen's Head............................p. 151
No supplier information available.

Mithun

1201 Alaskan Way, Suite 200
Seattle, WA 98101-2913
206-971-5608

Pacific Lutheran University, University Center .... p. 149
No supplier information available.

Noelker and Hull Associates, Inc.

30 W. King St.
Chambersburg, PA 17201
717-263-8464

Mount St. Mary's University, Knott Auditorium Renovation .... p. 60
Carpet: J&J Commercial Carpet. *Other:* Guilford of Maine. *Paint:* Sherwin-Williams.

NTD Architecture

200 Auburn-Folsom Road, Suite 200
Auburn, CA 95603
530-888-0999

Lincoln Public Library, Twelve Bridges Learning Center .... p. 122
Brick/Masonry: Rox Pro. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Crossville. *Clocks/Time management:* Electric Time, Primex. *Door hardware:* Adams Rite, Dorma. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Haws. *Fire/Life-safety systems:* Honeywell. *Flooring:* Crossville, Forbo, Mannington. *HVAC units:* Trane.

Indoor lighting: Alger International, Color Kinetics, Insight, Leviton Lighting Controls, Lite Control, Luxo, Scott, Smedmark. *Library/media center furniture:* Estey, Worden. *Lounge furniture:* Arcadia. *Markerboards:* Claridge. *Multipurpose-areas furniture:* Bretford, Nevins, SitOnIt. *Office furniture:* Herman Miller. *Other:* 3Form, Wilsonart. *Paint:* Benjamin Moore. *Roofing:* Genflex. *Washroom fixtures:* Kohler, Zurn. *Windows:* Vistawall.

Partners in Design Architects

600 52nd St., Suite 220
Kenosha, WI 53140
262-652-2800

***Gateway Technical College, Horizon Center for Transportation Technology .... p. 38**
No supplier information available.

Paulsen Architects

209 S. Second St., Suite 201
Mankato, MN 56001
507-388-9811

Rasmussen College—Eden Prairie Campus .... p. 107
Carpet: Milliken. *Ceilings:* Armstrong. *Doors:* Marshfield. *Flooring:* Tarkett. *Library/media center furniture, Lounge furniture, Multipurpose-areas furniture:* Herman Miller. *Paint:* Sherwin-Williams. *Washroom/shower partitions:* Hinyhiders.

Rasmussen College—Lake Elmo Campus .... p. 152
Cabinets: Wilsonart. *Carpet:* Milliken. *Ceilings:* Armstrong. *Doors:* Marshfield. *Flooring:* Armstrong, Toli. *Library/media center furniture, Lounge furniture, Multipurpose-areas furniture:* Herman Miller. *Paint:* Sherwin-Williams. *Washroom/shower partitions:* Hinyhiders.

PBK

14001 N. Dallas Parkway, #400
Dallas, TX 75240
972-233-1323

Sarah and Troy LaGrone Advanced Technology Complex .... p. 153
No supplier information available.

Perry Dean Rogers | Partners Architects

177 Milk St., Suite 7
Boston, MA 02109
617-423-0100

***Norwich University, Wise Campus Center .... p. 40-41**
Brick/Masonry: Vermont Brick. *Cafeteria furniture:* Emeco, Neudorfer. *Carpet:* Interface. *Ceilings:* Armstrong. *Ceramic tile:* American Olean. *Classroom furniture:* Specialt, Steelcase. *Clocks/Time management:* Chicago Lighthouse. *Door hardware:* Stanley. *Doors:* Kawneer, Nadcor. *Draperies/Blinds:* Nysan. *Drinking fountains:* Elkay. *Elevators:* Otis. *Hand-drying equipment:* Xcelerator. *Indoor lighting:* Bartco, Bega, Edison Price, Lightolier, Louis Poulsen, Selux. *Insulation:* Dow Chemical. *Lockers:* Penco Products. *Locks:* Sargent. *Lounge furniture:* Neinkamper. *Office furniture:* HON, Steelcase, Stylex. *Paint:* ICI. *Roofing:* Sarnafil. *Signage:* ASI Modulex. *Washroom accessories:* Bobrick. *Washroom/shower partitions:* Sanatec. *Waste receptacles:* Peter Pepper. *Windows:* Kawneer.

University of Arkansas—Fayetteville, J.B. Hunt Transport Services Center for Academic Excellence .... p. 72-73
Auditorium/Assembly furniture: Haworth, KI. *Brick/Masonry:* Glen-Gery. *Carpet:* Lees. *Ceilings:* Armstrong, Rulon. *Ceramic tile:* American Olean, Crossville. *Classroom furniture:* Haworth, Knoll, Steelcase. *Door hardware:* Stanley. *Doors:* Amweld, Kawneer. *Draperies/Blinds:* Draper. *Drinking fountains:* Elkay. *Elevators:* Otis. *Flooring:* Armstrong, Tate Access Flooring. *Insulation:* Dow Chemical, Firestone. *Locks:* Corbin Russwin. *Lounge furniture:* Brayton, Haworth. *Messageboards:* Claridge. *Movable partitions/walls:* Inscape, Modernfold. *Paint:* Sherwin-Williams. *Roofing:* Bitumen Technologies. *Skylights:* Kawneer. *Washroom accessories:* Bobrick. *Washroom/shower partitions:* Sanymetal. *Windows:* Kawneer.

PGAL

5555 San Felipe, Suite 1000
Houston, TX 77056
713-622-1444

University of Houston—Downtown, Shea Street Building and Vine Street Garage .... p. 76
Auditorium/Assembly furniture: American Seating. *Brick/Masonry:* Acme Brick. *Cabinets:* Avonite, Wilsonart. *Carpet:* Collins & Aikman, Lees. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Classroom furniture:* Izzy Design, Stylex. *Computer furniture:* Izzy Design, Versteel. *Door hardware:* Best Access Systems, Elmes, Ives, LCN Closers, Von Duprin. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Flooring:* Azrock. *HVAC units:* York. *Indoor lighting:* Focal Point, Gotham, Insight, Lithonia Lighting, Visionaire. *Insulation:* Cafco. *Lounge furniture:* Integra Seating. *Office furniture:* Knoll. *Other:* Draper, Maharam. *Paint:* ICI. *Roofing:* Johns Manville. *Washroom accessories:* American Standard. *Washroom fixtures:* Comtec. *Windows:* Accura Systems, Kawneer.

Plunkett Raysich Architects, LLP

11000 W. Park Place
Milwaukee, WI 53224
414-359-3060

***University of Wisconsin—Madison, Microbial Sciences Building ... p. 43**
Draperies/Blinds: Chicago Drapery. *Elevators:* Otis. *Flooring:* Wisconsin Terrazzo & Tile. *Lockers:* Storage Concepts. *Movable partitions/walls:* Duwe Metal Products.

Rees Associates, Inc.

951 Peachtree St. N.E.
Atlanta, GA 30309
404-351-6869

Baylor University Medical Center, Caruth Labor and Delivery Center.. p. 96
Draperies/Blinds: DesignTex. *Flooring:* Armstrong, Teknoflor. *Paint:* Kelly Moore. *Other:* Wilsonart.

University of Oklahoma—Tulsa, Schusterman Center Campus ....p. 94-95
Cabinets: Abet Laminati, Wilsonart. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* American Olean. *Classroom furniture:* Vecta. *Doors:* Marshfield. *Draperies/Blinds:* Lutron. *Flooring:* Armstrong, Nora Rubber Flooring. *Lounge furniture:* David Edward, Loewenstein. *Messageboards:* Peter Pepper. *Office furniture:* Knoll. *Paint:* Sherwin-Williams.

Robert A. Lack AIA Architecture + Design Inc.

230 Market St.
Lewisburg, PA 17837
570-524-2300

King's College, Scandlon Gym Wellness Center ....p. 132
Card systems: Hillman. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Doors:* Mohawk. *Emergency lighting:* Surelites. *Fire/Life-safety systems:* Simplex. *HVAC units:* Trane. *Indoor lighting:* Light Control. *Paint:* Sherwin-Williams. *Physical-education flooring:* Mondo. *Roofing:* ATS Metal. *Security systems:* Hillman. *Signage:* Best. *Windows:* YKK.

RTKL Associates Inc.

333 S. Hope St., C200
Los Angeles, CA 90071
214-908-3051

***University of Kansas School of Medicine, The University of Kansas Hospital, Cancer Center and Medical Pavilion...................... p. 31**
Auditorium/Assembly furniture: Brayton, Lowenstein. *Cabinets:* Nevamar, Wilsonart. *Cafeteria furniture:* Carolina, Source International, Surface Works. *Carpet:* Interface. *Ceilings:* Armstrong. *Ceramic tile:* Crossville, Dal-Tile, Stonepeak. *Classroom furniture:* Gunlocke. *Clocks/Time management:* Peter Pepper. *Communications systems:* Avaya. *Draperies/Blinds:* Maharam Fabrics. *Drinking fountains:* Elkay. *Elevators:* Kone. *Fire/Life-safety systems:* Siemens. *Flooring:* Tarkett. *Indoor lighting:* Cooper Lighting, Lightolier. *Lounge furniture:* Loewenstein, Versteel. *Office furniture:* Herman Miller. *Paint:* Benjamin Moore, ICI, Scuffmaster. *Physical-education flooring:* Johnsonite. *Science furniture:* Herman Miller, SitOnIt. *Scoreboards/Clocks:* Peter Pepper. *Washroom accessories:* American Standard, Elkay. *Washroom fixtures:* Sloan Valve.

***University of Kansas School of Medicine, The University of Kansas Hospital, Center for Advanced Heart Care .... p. 44**
Ceilings: Armstrong, Hunter Douglas. *Indoor lighting:* Cooper Lighting, Focal Point, Schultz. *Paint:* C/S Group, Crossville, Dal-Tile, Devoe, Forbo, ICI, IMG, LSI, Sherwin-Williams. *Windows:* Levelor.

Rutledge Interiors

22 A Middleton St.
Nashville, TN 37210
615-254-6012

***Motlow State Community College, Clayton Glass Library .... p. 39**
Brick/Masonry: General Shale Brick. *Carpet:* Shaw. *Ceilings:* Armstrong, Chicago Metallic, Don Grid, USG. *Ceramic tile:* Dal-Tile. *Door hardware:* Best Access, Hager, NGP, Norton, Precision, Stanley. *Doors:* Oshkosh. *Drinking fountains:* Acorn Aqua. *Elevators:* ThyssenKrupp. *Emergency lighting:* Cooper Lighting. *Fire/Life-safety systems:* Honeywell. *Flooring:* Armstrong. *Hand-drying equipment:* ASI. *HVAC control devices:* Andover Controls, Kele. *Indoor lighting:* Cooper Lighting, Corelite, Lam Lighting, Lightolier, RSA Lighting, Vistawall. *Insulation:* Johns Manville. *Lockers:* Penco. *Markerboards:* Polyvision. *Paint:* Sherwin-Williams. *Roofing:* Carlisle SynTec, Petersen Aluminum. *Signage:* Takeform. *Washroom accessories:* ASI, Bobrick. *Washroom fixtures:* Kohler. *Washroom/shower partitions:* RPI. *Windows:* Tubelite.

Scholer Corporation

111 West 240 South, Wea-Ton
P.O. Box 808
Lafayette, IN 47902-0808
765-474-1478

Purdue University, Windsor Dining Court .... p. 62
Brick/Masonry: Irving. *Cafeteria furniture:* Seating Concepts. *Carpet:* Masland, Tred Mor. *Ceilings:* Bouma Betton. *Ceramic tile:* Dal-Tile, Flor Gres, Georgia Pacific. *Door hardware:* LCN Closers, McKinney, Schlage, Von Duprin. *Doors:* Curries, Eggers, Kawneer, Thomson. *Drinking fountains:* Elkay. *Fire/Life-safety systems:* 3M, Viking. *Flooring:* Armstrong, USG. *HVAC control devices:* Bell & Gossett, Buffalo, Nibco, Sterling. *Insulation:* Dow, Owens Corning. *Kitchen equipment:* Stafford Smith, T&S Brass. *Paint:* Sherwin-Williams. *Roofing:* Carlisle SynTec, Firestone, Karnac, Tremco. *Washroom accessories:* Bobrick. *Washroom fixtures:* Sloan Valve, T&S Brass. *Washroom/shower partitions:* Santana. *Windows:* Kawneer.

Scott Simons Architects

75 York St.
Portland, ME 04101
207-772-4656

***Tilton School, Academic Building .... p. 32-33**
Auditorium/Assembly furniture: KI. *Cabinets:* Gibraltar, Wilsonart. *Carpet:* Shaw. *Ceilings:* Rulon. *Ceramic tile:* Dal-Tile. *Clocks/Time management:* Sapling Clocks. *Communications systems:* Dukane. *Door hardware:* Corbin Russwin. *Doors:* Mohawk. *Draperies/Blinds:* Draper, Lightblock. *Drinking fountains:* Halsey Taylor. *Elevators:* Canton Elevator. *Emergency lighting:* Cooper Lighting. *Fire/Life-safety systems:* JL Industries. *Flooring:* Dal-Tile, Forbo. *HVAC units:* Trane. *Indoor lighting:* Cooper Lighting, Elliptipar, Lite Control, Selux, Vantage. *Insulation:* Tridon Insulation. *Locks:* Corbin Russwin. *Markerboards:* Claridge. *Messageboards:* Claridge. *Multipurpose-areas furniture, Office furniture:* Herman Miller. *Paint:* Sherwin-Williams. *Plumbing:* Wade. *Roofing:* Pac Clad. *Science furniture:* Kewaunee Scientific, Wilsonart. *Skylights:* Wasco. *Washroom fixtures:* Kohler. *Washroom/shower partitions:* Santana. *Waste receptacles:* Bobrick. *Windows:* EFCO.

SHP Leading Design (formerly Steed Hammond Paul)

82 Williams Ave.
Hamilton, OH 45013
513-863-5441

Tecumseh High School .... p. 123
No supplier information available.

SHW Group LLP

5717 Legacy Drive, Suite 250
Plano, TX 75024
214-473-2400

***Andy Dekaney High School ... p. 45**
Athletic equipment: Mateflex, Porter, Stonhard. *Auditorium/Assembly furniture:* Irwin Seating. *Bleachers/Grandstands:* Sturdisteel. *Brick/Masonry:* Acme Brick, Alamo Stone, Southwest Concrete Products, Stone Castle Industries. *Cabinets:* Hallmark Casework. *Card systems:* Sonitrol. *Carpet:* Mannington. *Ceilings:* Armstrong. *Ceramic tile:*

Casa Dolce Casa, Dal-Tile. *Clocks/Time management:* Primex Wireless. *Doors:* VT Industries. *Draperies/Blinds:* Bali. *Elevators:* Otis. *Fire/Life-safety systems:* Fire Safe. *Flooring:* Armstrong. *Hand-drying equipment:* JetAir. *Indoor lighting:* Lightolier. *Insulation:* Dow. *Kitchen equipment:* GE. *Lockers:* List Industries. *Markerboards:* Best Rite. *Movable partitions/walls:* Kwik-Wall. *Paint:* PPG. *Physical-education flooring:* Aacer Flooring. *Roofing:* Berridge. *Science furniture:* Chicago Faucet, Hallmark Casework. *Scoreboards/Clocks:* Fair Play. *Security systems:* Sonitrol. *Washroom accessories:* A&J Washroom Accessories, Georgia Pacific. *Windows:* Versalux.

Comal Independent School District, Administration and Support Services Building .... p. 54
Brick/Masonry: Hanson. *Cabinets:* Terrill. *Card systems:* Ingersoll Rand. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Ruskin. *Door hardware:* Schlage. *Doors:* Eggers. *Draperies/Blinds:* Hunter Douglas. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Emergency lighting:* Bodine. *Fire/Life-safety systems:* Silent Knight. *Flooring:* Armstrong. *HVAC control devices:* Automated Logic. *HVAC units:* Lennox. *Indoor lighting:* Hubbell. *Insulation:* Guardian. *Locks:* Schlage. *Paint:* Sherwin-Williams. *Plumbing:* Morrison. *Roofing:* Suprema. *Security systems:* Silent Knight. *Signage:* Best. *Skylights:* Conner Legrand. *Washroom fixtures:* Kohler. *Windows:* Kawneer.

Duncanville High School .... p. 88
No supplier information available.

J. Lyndal Hughes Elementary School .... p. 124
No supplier information available.

Mildred Hawk Elementary School... p. 74
No supplier information available.

Theodore G. Davis Middle School... p. 89
Bleachers/Grandstands: Interkal. *Brick/Masonry:* York Building. *Cabinets:* Collegedale. *Carpet:* Collins & Aikman. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Door hardware, doors:* Mohawk. *Draperies/Blinds:* Bali. *Elevators:* ThyssenKrupp. *Insulation:* Green Guard. *Library/media center furniture:* Russwood. *Lockers:* Republic Storage Systems. *Markerboards:* Claridge. *Messageboards:* Hightech Signs. *Movable partitions/walls:* Modernfold. *Paint:* Sherwin-Williams. *Physical-education flooring:* Robbins Sports Surfaces. *Roofing:* Firestone. *Signage:* Best.

The University of Michigan—Flint, David M. French Hall Renovations .... p. 75, 108
Carpet: Collins & Aikman, Milliken. *Ceilings:* Armstrong. *Ceramic tile:* Virginia Tile. *Classroom furniture:* KI. *Door hardware:* Schlage. *Doors:* Oshkosh. *Draperies/Blinds:* Techmatic. *Fire/Life-safety systems:* Johnson Controls. *Flooring:* Mannington. *Indoor lighting:* Cooper Lighting. *Lounge furniture:* Knoll. *Office furniture:* Knoll. *Paint:* Sherwin-Williams.

Sillman Wright Architects

7515 Metropolitan Drive, Suite 400
San Diego, CA 92108
619-294-7515

Alliant International University, Student Center Renovation .. p. 109
Carpet: Shaw. *Ceramic tile:* Dal-Tile. *Door hardware:* Eliason, Schlage. *Indoor lighting:* Day-Brite, Lumux. *Plumbing:* Chicago Faucet, Kohler, Sloan Valve, Zurn. *Washroom accessories:* Bobrick. *Washroom fixtures:* Chicago Faucet, Kohler.

Sodexo, Inc.

1971 University Blvd.
Lynchburg, VA 24502
434-592-4751

Liberty University, Reber Thomas Dining Hall and Founders Food Court .... p. 64-65
No supplier information available.

The Stacy Group

200 E. 10th St. Plaza, Suite C
Edmond, OK 73034
405-330-8292

Centennial Elementary School.. p. 90
Athletic equipment: Aalco. *Bleachers/Grandstands:* Sheridan. *Brick/Masonry:* Acme Brick, Coronado Stone Products, Featherlite. *Carpet:* Interface, Lees. *Ceilings:* USG. *Ceramic tile:* Dal-Tile. *Clocks/Time management:* Primex Wireless. *Door hardware:* Best Access. *Doors:* Oshkosh. *Draperies/Blinds:* Hunter Douglas, JB Martin. *Drinking fountains:* Oasis. *Emergency lighting:* Dual Lite. *Flooring:* Armstrong, Dal-Tile. *HVAC units:* Trane. *Indoor lighting:* Belfer, Hubbell Lighting, Visa. *Insulation:* Owens Corning. *Markerboards:* Polyvision. *Paint:* Kelly Moore. *Physical-education flooring:* Action Floor Systems. *Playground equipment:* Surface America. *Roofing:* Berridge, Siplast. *Washroom accessories:* Bobrick. *Washroom fixtures:* Intersan. *Washroom/shower partitions:* General Partitions. *Windows:* Kawneer.

The Stacy Group

10229 E. 96th St. N., Suite 101
Owasso, OK 74055
918-272-2622

***Collinsville Early Childhood Center .... p. 34**
Cabinets: LSI, Interface. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Clocks/Time management, Communications systems:* SimplexGrinnell. *Door hardware:* Schlage. *Doors:* Graham, Republic. *Drinking fountains:* Zurn. *Emergency lighting:* Hubbell Lighting. *Fire/Life-safety systems:* SimplexGrinnell. *Flooring:* Azrock. *HVAC control devices, HVAC units:* Carrier. *Indoor lighting:* Hubbell Lighting. *Insulation:* Johns Manville. *Locks:* Schlage. *Markerboards:* Newline. *Messageboards:* Newline. *Other:* Sound Concepts. *Paint:* Sherwin-Williams. *Plumbing:* Zurn. *Roofing:* Alliance Steel. *Security systems:* SimplexGrinnell. *Signage:* A.R.K. Ramos. *Washroom accessories:* Bradley. *Washroom fixtures:* American Standard, Bradley, Zurn. *Washroom/shower partitions:* General Partitions. *Windows:* Vistawall.

Street Dixon Rick Architecture, PLC

107 Kenner Ave.
Nashville, TN 37205
615-298-2525

The Harpeth Hall School, Hortense B. Ingram Upper School ....p. 91
Brick/Masonry: Nash Brick. *Cabinets:* LSI Casework. *Carpet:* Masland. *Ceilings:* USG. *Ceramic tile:* Dal-Tile. *Classroom furniture:* Global, Knoll. *Clocks/Time management:* Franklin Time Systems. *Door hardware:* Sargent. *Doors:* Algoma Hardwoods, Total Doors. *Draperies/Blinds:* Draper.

Drinking fountains: Halsey Taylor. *Elevators:* ThyssenKrupp. *Emergency lighting:* Bodine. *Flooring:* Armstrong, Azrock, Plyboo, Roppe. *HVAC control devices:* Trane. *HVAC units:* Aerco, Trane. *Indoor lighting:* Boyd Lighting, Columbia, Focal Point, Prescolite, Prima. *Insulation:* Johns Manville. *Lockers:* ASI Lockers, Ideal Lockers. *Markerboards:* Polyvision. *Multipurpose-areas furniture:* Davis. *Office furniture:* Global Partitions, Gunlocke. *Other:* Da-Lite. *Paint:* Porter, Tnemec. *Roofing:* Carlisle SynTec. *Skylights:* Kalwall. *Washroom accessories:* Bradley. *Washroom fixtures:* American Standard, Elkay. *Windows:* Marvin.

Susan Doban Architect, PC

25 Chapel St., Suite #900
Brooklyn, NY 11201
718-797-1041

Monroe College, Culinary Arts Center ....p. 154-155

Ceilings: Armstrong. *Ceramic tile:* Dal-Tile. *Door hardware:* Ives, LCN Closers, Rockwood. *Doors:* Ceco. *Fire/Life-safety systems:* Ansul. *Flooring:* Oscoda Plastics. *HVAC units:* Greenheck. *Indoor lighting:* BK Lighting, Lithonia Lighting, Shaper. *Insulation:* CertainTeed. *Kitchen equipment:* Blodgett, Cleveland Range, Eagle, Gaylord, Hobart, Jade, Keating, Kolpak, Manitowoc, Metro, Traulsen. *Paint:* Benjamin Moore. *Roofing:* Johns Manville. *Washroom fixtures:* Chicago Faucet. *Windows:* YKK.

Symmes Maini & McKee Associates (SMMA, Inc.)

1000 Massachusetts Ave.
Cambridge, MA 02138
617-547-5400

Providence College, Concannon Fitness Center .... p. 133

Athletic equipment: Cybex, Hammer Strength, Life Fitness. *Brick/Masonry:* Bowerstone Shale. *Card systems:* Persona. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Communications systems:* Bogen. *Door hardware:* LCN Closers, Von Duprin. *Doors:* Marshfield. *Drinking fountains:* Halsey Taylor. *Fire/Life-safety systems:* Notifier. *Hand-drying equipment:* Bradley. *HVAC control devices:* Johnson Controls. *HVAC units:* Trane. *Indoor lighting:* Columbia Lighting, Hydra, Pathway, Winona. *Insulation:* Owens Corning. *Locks:* Corbin Russwin. *Movable partitions/walls:* Modernfold. *Paint:* Pratt & Lambert. *Physical-education flooring:* Nora Rubber Flooring. *Plumbing:* Delta, Sloan Valve, Zurn. *Roofing:* Sarnafil. *Washroom accessories:* Bradley. *Washroom fixtures:* American Standard, Kohler, Symmons. *Windows:* Kawneer.

Texas Tech University System Facilities Planning and Construction

15th & Akron, Administration
Building Room 41
Lubbock, TX 79409
806-742-1166

Texas Tech University, National Ranching Heritage Center ...... p. 55

Carpet: Bentley Prince Street, Monterey. *Ceilings:* USG. *Classroom furniture:* KI. *Computers:* Dell. *Door hardware:* McKinney, Rockwood, Sargent. *Doors:* Maiman. *Draperies/Blinds:* O'Hair Wood Shutters. *Elevators:* ThyssenKrupp. *Fire/Life-safety systems:* Firetrol, Simplex. *Hand-drying equipment:* Bobrick. *HVAC control devices:* Johnson Controls. *Library/media center furniture:* Fire King, Great Openings. *Lounge furniture:* Flexsteel. *Markerboards:* Claridge. *Office furniture:* Haworth, Via. *Paint:* Benjamin Moore. *Roofing:* Centria. *Washroom accessories:* Bobrick. *Washroom fixtures:* Kohler. *Washroom/shower partitions:* General Partitions. *Windows:* Pella.

Texas Tech University System, Student Wellness Center .... p. 97

Brick/Masonry: Acme. *Cafeteria furniture:* Knoll. *Card systems:* Simplex. *Carpet:* Mannington. *Ceilings:* Armstrong. *Ceramic tile:* Mohawk. *Classroom furniture:* Abco. *Clocks/Time management:* LaCrosse. *Door hardware:* Sargent. *Doors:* McKinney. *Draperies/Blinds:* Hunter Douglas. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Flooring:* Scofield. *Kitchen equipment:* Frigidaire, General Partitions. *Laundry equipment:* Whirlpool. *Lockers:* Superior. *Locks:* Sargent. *Lounge furniture:* Campbell. *Markerboards, messageboards:* Claridge. *Paint:* Benjamin Moore. *Physical-education flooring:* Armstrong. *Security systems:* Simplex. *Signage:* Take Form. *Washroom accessories:* Bobrick, Kimberly Clark. *Waste receptacles:* United.

TowerPinkster

242 E. Kalamazoo Ave., Suite 200
Kalamazoo, MI 49007
269-343-6133

Otsego High School .... p. 92

Athletic equipment: Aalco, Jaypro. *Auditorium/Assembly furniture:* Hussey Seating. *Bleachers/Grandstands:* Interkal. *Brick/Masonry:* Belden Brick. *Cabinets:* Case Systems. *Carpet:* Mannington, Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Crossville. *Clocks/Time management, communications systems:* Dukane. *Doors:* Oshkosh. *Drinking fountains:* Elkay. *Elevators:* ThyssenKrupp. *Emergency lighting:* Peerlite. *Fire/Life-safety systems:* Edwards Systems Technology. *Flooring:* Forbo. *Hand-drying equipment:* Bradley. *HVAC units:* Carrier. *Indoor lighting:* Lithonia, Peerlite, Se'Lux. *Insulation:* Owens Corning. *Kitchen equipment:* AP Wyott, Champion, Southbend. *Library/media center furniture:* Worden. *Lockers:* Republic. *Markerboards:* ProSteel. *Movable partitions/walls:* Hufcor. *Paint:* Pittsburgh Paint. *Physical-education flooring:* Connor, Mondo. *Plumbing:* Eljer. *Roofing:* Carlisle SynTec. *Science furniture:* Sheldon. *Scoreboards/Clocks:* Daktronics. *Skylights:* Kalwall. *Washroom accessories:* Bradley. *Washroom fixtures:* Bradley. *Windows:* Kawneer, Litex, Pella.

Treanor Architects, PA

110 McDonald Drive, Suite 192
Lawrence, KS 66044
785-842-4858

University of Florida, Delta Delta Delta .... p. 140

Cafeteria furniture: Fairfield Chair, Tuff Edge. *Carpet:* J&J Commercial, Masland. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Flooring:* Gammapar Wood Floor. *HVAC control devices:* Honeywell. *HVAC units:* Trane. *Library/media center furniture:* Jasper, SitOnIt. *Locks:* Schlage. *Lounge furniture:* Bernhardt, Fairfield Chair, Vanguard. *Paint:* Benjamin Moore. *Residence hall furniture:* Adden Furniture. *Washroom accessories:* Bobrick.

TR,i Architects

8251 Maryland Ave., Suite 300
St. Louis, MO 63105
314-726-9990

***Logan University & College of Chiropractic, William D. Purser, DC Center .... p. 46**
Auditorium/Assembly furniture: Irwin Seating. *Ceilings:* Armstrong, Decoustics. *Ceramic tile:* Flancke. *Door hardware:* Hager, Stanley, Yale. *Doors:* Graham. *Draperies/Blinds:* MechoShade. *Emergency lighting:* Metalux, Portfolio. *Flooring:* Mannington. *HVAC units:* Titus, Trane. *Indoor lighting:* Elco, Kramer, Metalux, Tivoli. *Insulation:* Certainteed. *Lockers:* Republic. *Locks:* Yale. *Movable partitions/walls:* Modernfold. *Paint:* Sherwin-Williams. *Plumbing:* Crane Plastics. *Roofing:* Firestone Building Products. *Windows:* U.S. Aluminum.

Urban Studio, Inc.

878 Peachtree St., Suite 100
Atlanta, GA 30309
404-876-7499

Ron Clark Academy, Classroom Building .... p. 93
Carpet: Interface. *Flooring:* Duro Design. *Indoor lighting:* Axis Lighting. *Paint:* Duron, Sherwin-Williams. *Skylights:* W.S. Nielsen.

Valerio Dewalt Train Associates (with Barbara S. Pollack & Associates)

500 N. Dearborn, Suite 900
Chicago, IL 60610
312-332-0363

Flashpoint, The Academy of Media Arts & Sciences .... p. 98
Auditorium/Assembly furniture: Figueras. *Carpet:* Interface. *Chalkboards:* Walltalkers. *Classroom furniture:* Steelcase, Vecta. *Computer furniture:* Steelcase. *Computers:* MacIntosh. *Draperies/Blinds:* MechoShade. *Drinking fountains:* Elkay. *Hand-drying equipment:* Mitsubishi. *Library/media center furniture:* Polyvision, Steelcase, Vecta. *Lockers:* Lennox. *Markerboards, Multipurpose-areas furniture:* Steelcase. *Multipurpose-areas furniture:* Vecta. *Other:* Auralex Acoustics. *Washroom accessories:* Sloan Valve. *Washroom fixtures:* Kohler. *Waste receptacles:* United Receptacles.

VCBO Architecture, LLC

524 South 600 East
Salt Lake City, UT 84102
801-575-8800

***University of Utah, Spencer F. and Cleone P. Eccles Health Sciences Education Building ....p. 47**
Brick/Masonry: Eagle. *Cabinets:* Boswell Olsen. *Carpet:* Monterey. *Ceilings:* Armstrong, Chicago Metallic. *Ceramic tile:* American Olean. *Door hardware:* Vandl Gard, Von Duprin. *Doors:* Marshfield, Steelcraft. *Draperies/Blinds:* Skyco. *Elevators:* ThyssenKrupp. *Fire/Life-safety systems:* Vesda, Victaulic. *Flooring:* American Olean, Armstrong. *HVAC units:* Haakon, Penn. *Indoor lighting:* Sylvania, Widelite. *Insulation:* Dow Chemical, Johns Manville. *Kitchen equipment:* Metro, TRUE, Wolf. *Lockers:* Hadrian. *Markerboards:* Maharam, Platinum Visual System. *Movable partitions/walls:* Modernfold, Won-Door. *Paint:* Kwal, Tnemec. *Plumbing:* EBAA Iron, Griffin Pipe Co. *Roofing:* Firestone, Tamko. *Security systems:* Ramtel. *Signage:* Active Safety, Allotech. *Washroom accessories:* Bobrick. *Washroom fixtures:* Zurn. *Washroom/shower partitions:* Bobrick. *Windows:* Kawneer, Viracon.

Westminster College of Salt Lake City, Dolores Doré Eccles Health, Wellness and Athletic Center ..p. 134
Brick/Masonry: Lehi Block. *Carpet:* Shaw. *Ceramic tile:* Dal-Tile. *Clocks/Time management:* Primex. *Draperies/Blinds:* Brilliance, Hunter Douglas. *Elevators:* Schindler. *Fire/Life-safety systems:* JL Industries. *Flooring:* Bona, Mondo. *HVAC control devices:* Precision. *HVAC units:* Broan, Carrier, Schauenburg. *Indoor lighting:* Energie, Exceline, Gammalux, Lightolier. *Insulation:* Owens Corning. *Lockers:* Penco. *Markerboards:* A-Line. *Movable partitions/walls:* Modernfold. *Paint:* Devoe Paint. *Physical-education flooring:* Mondo. *Plumbing:* Watts, Wilkins, Zurn. *Roofing:* Carlisle SynTec. *Security systems:* Hirsch Velocity. *Signage:* Allotech. *Skylights:* Aladdin, Kalwall. *Washroom fixtures:* Bemis, Kohler. *Washroom/shower partitions:* Flush Metal Partition. *Windows:* Comfort Ti.

Vision 3 Architects

225 Chapman St.
Providence, RI 02905-4592
401-461-7771

University of Rhode Island, Hope Commons Dining Hall ....p. 66-67
Brick/Masonry: Glen-Gery, Rockcast. *Cafeteria furniture:* Furniture Lab, KI. *Card systems:* Locknetics. *Carpet:* Shaw. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Draperies/Blinds:* Draper. *Fire/Life-safety systems:* FCI. *Flooring:* Dal-Tile. *HVAC control devices:* Siemens. *HVAC units:* Trane. *IAQ devices:* Siemens. *Indoor lighting:* Elliptipar, Gotham, Lithonia Lighting. *Insulation:* ThyssenKrupp. *Kitchen equipment:* Delfield, TRUE, Vulcan. *Lockers:* Republic Storage Systems. *Lounge furniture:* Furniture Lab. *Messageboards:* Claridge. *Paint:* Sherwin-Williams. *Roofing:* CertainTeed, Peterson Aluminum Corp. *Skylights:* Vistawall. *Washroom accessories:* American Specialties. *Washroom/shower partitions:* Santana. *Windows:* Vistawall.

WHR Architects

1111 Louisiana, 26th Floor
Houston, TX 77002
713-665-5665

University of Texas Health Science Center at Houston, Replacement Research Facility .... p. 114-115
Brick/Masonry: Redondo. *Carpet:* Interface. *Ceilings:* Armstrong. *Ceramic tile:* Dal-Tile. *Chalkboards:* Polyvision. *Door hardware:* Best Access, Corbin Russwin, McKinney, Sargent. *Doors:* Architectural Wood Doors, Horta. *Elevators:* ThyssenKrupp. *Flooring:* Johnsonite, Mannington. *HVAC control devices:* Johnson Controls, Phoenix. *Indoor lighting:* Lithonia, Peerless. *Kitchen equipment:* GE. *Locks:* Best Access, Sargent. *Paint:* Benjamin Moore, Carboline. *Roofing:* Firestone. *Science furniture:* Advanced Lab Concepts, Kewaunee. *Washroom/shower partitions:* Sanymetal. *Windows:* Vistawall.

Woolley Morris Architects, PC

313 E. Willow St., Suite 107
Syracuse, NY 13203
315-426-9871

State University of New York College at Cortland, Shea Hall Renovations .... p. 141
Ceilings: Tectum. *Ceramic tile:* Dal-Tile. *Door hardware:* Pemco, Rockwood. *Doors:* Feel Safe, Pioneer, VT Industries. *Draperies/Blinds:* Springs Window Fashions. *Drinking fountains:* Bradley. *Fire/Life-safety systems:* Allied, Edwards, Larsen's. *Flooring:* Armstrong. *HVAC control devices:* Kimble. *HVAC units:* Bell & Gossett. *Indoor lighting:* Cooper Lighting. *Insulation:* Owens Corning, ROXUL. *Kitchen equipment:* GE. *Laundry equipment:* GE. *Lockers:* Penco. *Messageboards:* Wilcox. *Paint:* Sherwin-Williams, Zolatone. *Washroom fixtures:* Bradley. *Washroom/shower partitions:* Capitol Partitions, Comtec, Santana, Swanstone. *Windows:* EFCO.

WWCOT

3130 Wilshire Blvd., Sixth Floor
Santa Monica, CA 90403
310-857-5361

California State University—Channel Islands, Dining Expansion .... p. 63
Cabinets: Lamin-Art. *Cafeteria furniture:* Steelcase. *Carpet:* Interface. *Ceilings:* Armstrong. *Door hardware:* Ives, Pemko, Schlage. *Drinking fountains:* Haws. *Emergency lighting:* Active Safety. *Flooring:* Energy Labs. *HVAC units:* Energy Labs. *Indoor lighting:* Bruck, Gotham, Lithonia Lighting. *Kitchen equipment:* Arctica, Beverage Air, Borrick, Hatco, Lang Fisher, Metro, Piper Products, Randell, Spare Number, Traulsen, Wells. *Lounge furniture:* Steelcase. *Paint:* Dunn Edwards. *Windows:* Metal Window Corp.

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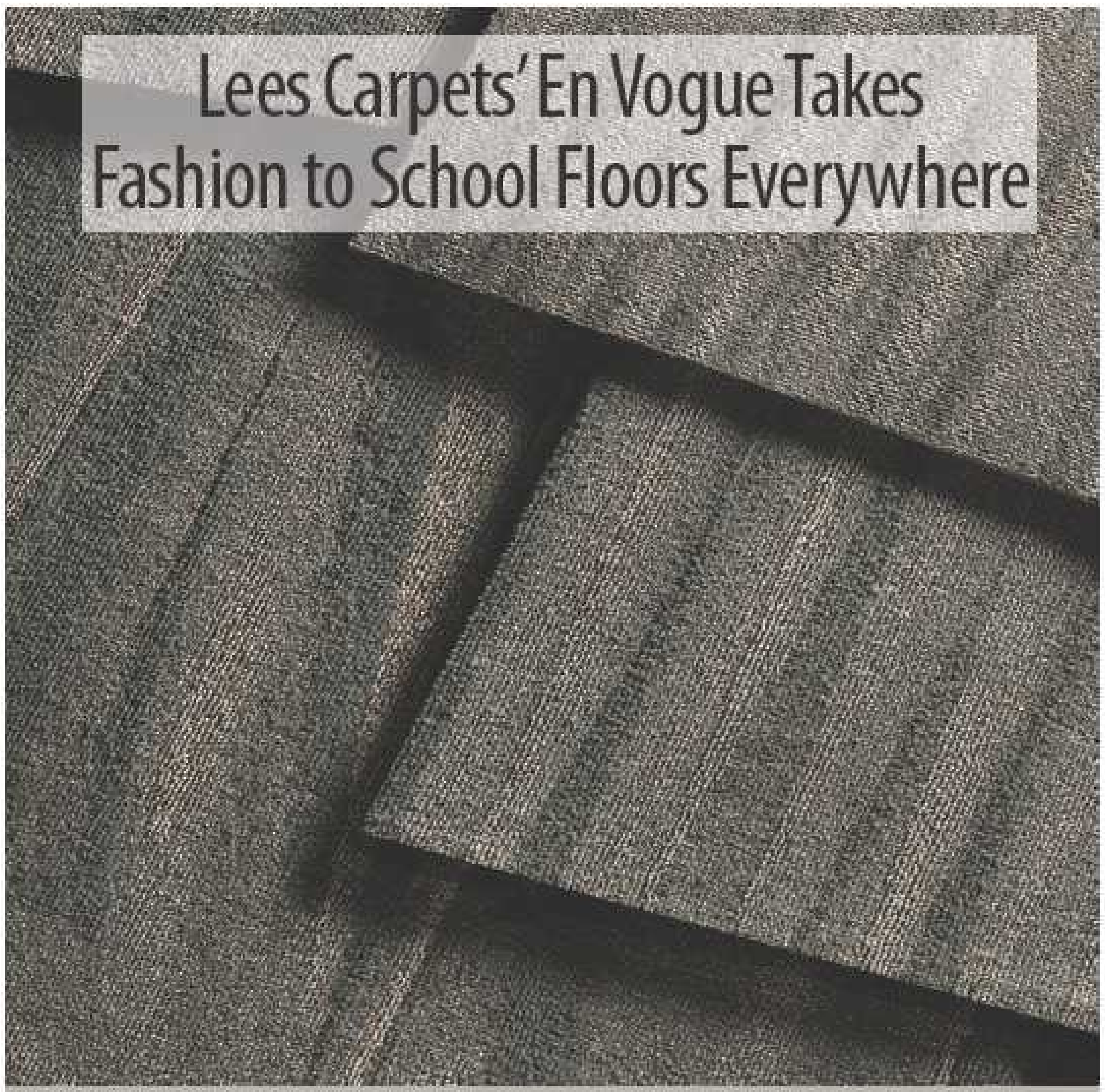

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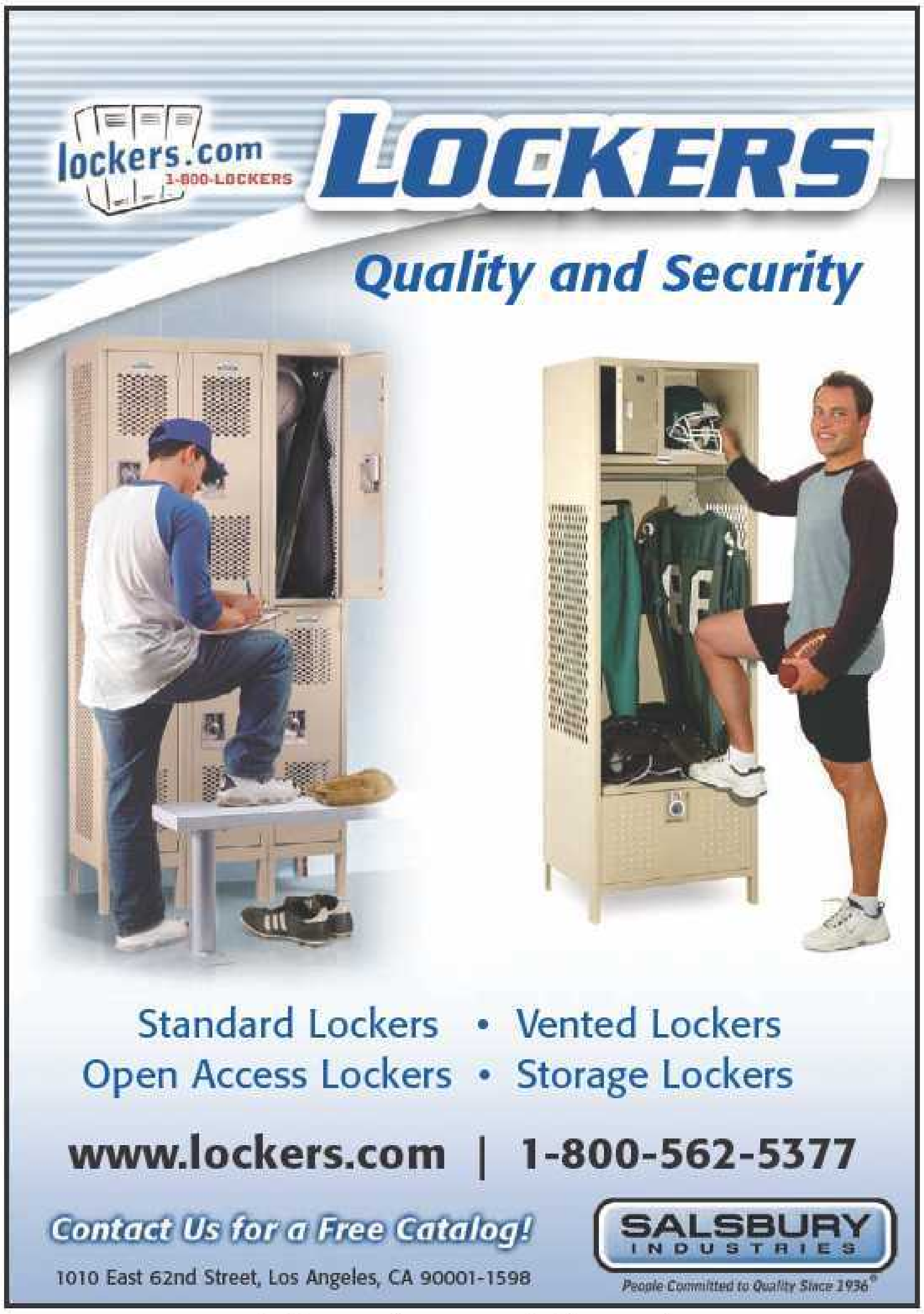

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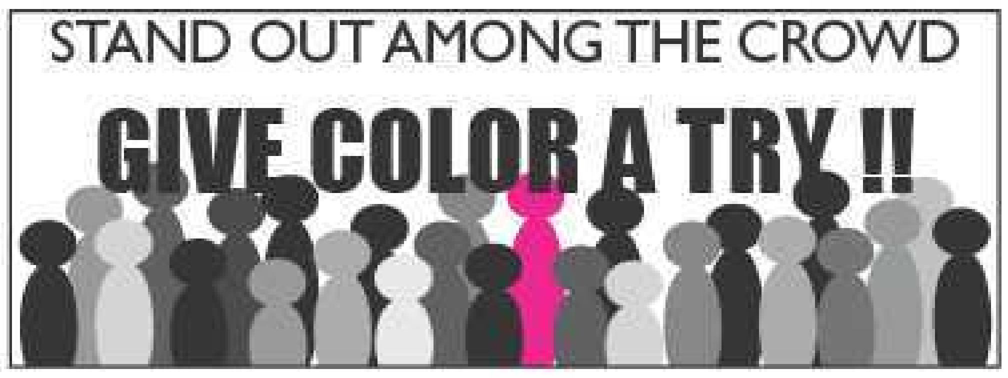

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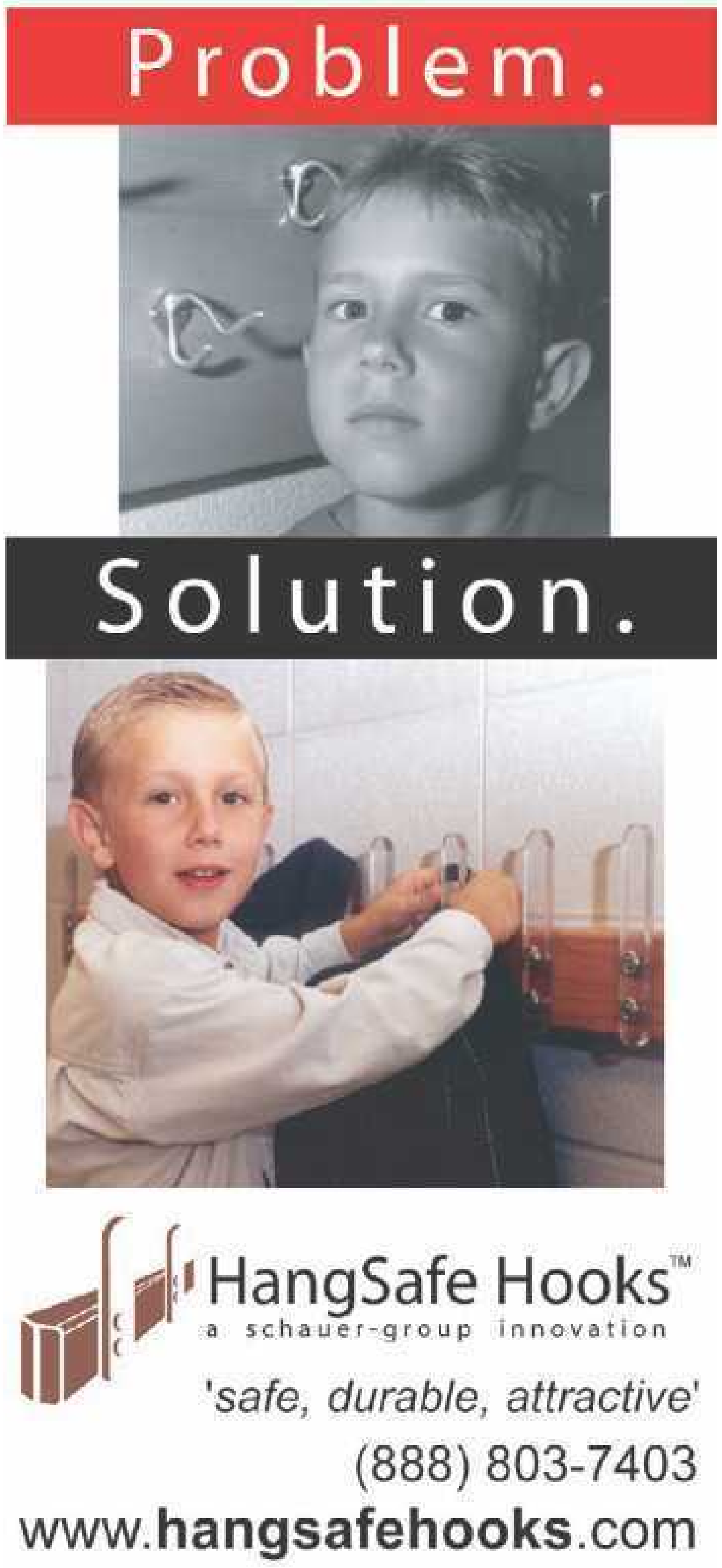

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